Joint Institutional Parking Management Plan

2024 Annual Update

Prepared for: Burlington Planning Commission

Submitted by: CATMA

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catmavt.org

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1. Introduction

The Joint Institutional Parking Management Plan (JIPMP) is submitted to the Planning Commission and Development Review Board to demonstrate current and anticipated parking demand for Burlington's "Hill" Institutions to meet the requirements set forth in Article 8 of the Comprehensive Development Ordinance. Burlington's "Hill" Institutions, comprised of Champlain College, University of Vermont (UVM), and University of Vermont Medical Center (UVMMC), are the founding members of the Chittenden Area Transportation Management Association (CATMA). CATMA has submitted the Joint Institutional Parking Management Plan and annual updates to the City of Burlington on behalf of the "Hill" Institutions since 2009. The current 2023-2028 JIPMP was approved by the Burlington Development Review Board on July 18, 2023.

This Annual Update is submitted to the City's Office of City Planning and Department of Permitting & Inspections by CATMA on behalf of its founding institutional members: Champlain College, the University of Vermont, and The University of Vermont Medical Center.

Joint Institutional Parking Management Plan 2024 Annual Update

Purpose
The JIPMP annual updates are intended to:
- Provide updated data to the approved 5-year JIPMP
- Demonstrate that the institutions are employing, maintaining, improving and collaborating on transportation demand management (TDM) practices as outlined in the 5-year plan
- Demonstrate that the institutions are managing parking demand and resources holistically, based on updated enrollment, employment, and/or parking policy updates and supplying adequate parking facilities

Content
The 2024 JIPMP contains a narrative outlining updates to the approved 2023-2028 JIPMP, including a collective summary chapter highlighting the current parking conditions of each institution, on-street parking trends, transportation trends and TDM strategies.

There are also individual chapters for each institution (Champlain College, University of Vermont, and The University of Vermont Medical Center) which contain the following information:
- Current users, infrastructure, and development
- Status of building projects
- Updates on lot counts and on-street parking from the 2023-2028 JIPMP
- Institutional mode trends reported from the 2023 Fall CATMA Employee and Student Transportation Surveys
- Updates on institution specific TDM strategies

About CATMA

CATMA was established in April 1992 by the three "Hill" institutions in Burlington: Champlain College, University of Vermont, and the University of Vermont Medical Center. In January 2015, CATMA expanded to a regional Transportation Management Association (TMA) serving Chittenden County with transportation demand management services, incentives, and programs. Its mission is

to work with members and community partners to plan and manage safe, convenient, and economical transportation and parking options in ways that better coordinate land use and reduce environmental impacts. In addition to collective parking management among the Hill institutions, they have also invested in and committed to TDM strategies for 31+ years. An overview and information on CATMA can be found at catmavt.org.

Transportation Management Associations (TMA)

TMAs are associations, organizations, or cooperatives that provide transportation services and education to businesses, property owners, residents, and employees in a defined geographic area, combining their efforts to expand transportation options and reduce program costs. They are not-for-profit collaborations of private and public sector entities working together towards common goals, such as congestion mitigation, transportation services and pollution reduction.

Transportation Demand Management (TDM)

The term 'transportation demand management' means the use of strategies to inform and encourage travelers to maximize the efficiency of a transportation system, leading to improved mobility, reduced congestion, and lower vehicle emissions, including strategies that use planning, programs, policies, marketing, communications, incentives, pricing, data and technology."[1]

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[1] Definition as proposed by the Association for Commuter Transportation for federal law

2. Collective Institutional Summary

Each of the institutions' parking supply and demand are summarized within based on data gathered during the Fall of 2023. This assembled data informs the analysis that demonstrates the existing parking supply meets current demand for each institution.

In addition, information regarding the anticipated development and growth on each campus informs the anticipated parking supply and demand out to 2028. Future demand predictions and additional information can be found in the 2023-2028 JIPMP. The intent of the JIPMP, and parking management planning more generally, is to demonstrate the policies and programs that enable more efficient utilization of parking resources. For the institutions, this has and continues to entail many strategies employed collectively, through CATMA and agreements among the institutions, as well as individually, to best utilize resources given the transportation mobility and parking needs of each institution's population.

Peak Parking Demand

Two primary methods can be used to estimate the current and future peak parking demand for each institution: lot counts and survey data. These methods have been utilized previously and are referenced in the 2023-2028 JIPMP (pg. 17). As noted in previous JIPMP documents, there are limitations to both methods of estimating parking demand, however, it is reasonable to assume that these two methodologies provide low and high estimates to represent the "bookends" in understanding peak parking demand on campus.

Quarterly lot counts conducted consistently provide a ground truth during limited time windows (i.e. three days during peak periods at four times throughout the year) to demonstrate the utilization of the institutionally controlled lots. Although these time windows are targeted to capture peak times, it is recognized that this count data may slightly underestimate the typical peak parking demand as it only represents a limited time frame and may not capture peak parking demand due to variability. The peak of the utilization counts is used to represent peak parking based on lot counts.

Survey data provide samples from which estimates of peak parking demand can be derived based on user groups, mode trends, and other reported travel behaviors. This data summarizes typical patterns for different user groups but may not capture the daily variability that lot counts are able to, thus providing an overestimate of typical peak demand. The data collected from the CATMA Fall Transportation Survey is primarily utilized to forecast the Future Parking Demand (see Table 2.2 below) for each institution and demonstrates travel behavior trends. We have included a current peak parking demand based on 2023 Survey Data in Appendix C. An overview of Parking Demand Estimation provided by UVM Transportation Research Center can be found in 2020-2022 JIPMP, Appendix B which mentions the overestimate bookend the survey data represents.

The peak parking utilization counts conducted quarterly by the institutions since Fall 2019 are considered reliable given the frequency count schedule. The JIPMP Annual Updates will monitor future parking demand estimates with peak parking utilization counts.

Table 2.1 2023 and 2022 Parking Demand Summary for Champlain College, UVM, and UVMMC

	2023			2022		
	Champlain College	UVM	UVMMC	Champlain College	UVM	UVMMC
Current Conditions						
Potential Users	**2,452**	**18,726**	**8,716**	**2,348**	**17,540**	**9,427**
Peak Parking Utilization Counts	440[1]	3,238[2]	2,008[3]	427	3,508	1,941
Total Parking Supply	**642**	**4,956**	**2,500**	**642**	**4,865**	**2,500**
Net Spaces Peak Utilization	202	1,718	492	215	1,357	559

1. *April 11, 2023, at noon was the peak utilization count based on 2023 count data for Champlain College.*
2. *July 18, 2023, at 2pm was the peak utilization count based on 2023 count data for UVM.*
3. *April 11, 2023, at 10am was the peak utilization count based on 2023 count data for UVM Medical Center.*

Table 2.2 Future Parking Demand Summary from 2023-2028 JIPMP for Champlain College, UVM, and UVMMC

Future Parking Demand Summary (2023-2028 JIPMP)			
	Champlain College	UVM	UVMMC
Future Conditions			
Potential Users	**2,990**	**17,820**	**9,427**
Total Peak Parking Demand (survey data)	992	4,988	2,145
Total Parking Supply	**642**	**5,503**	**2,500**
Net Spaces Peak Demand	-350	515	355

Collectively, the institution's parking supply meets parking demand based on the peak parking utilization according to count data.

Trends and Patterns

Policy Shift

Updates to the Article 8 Ordinance were approved by City Council on January 9, 2023. These updates codify the shift away from parking minimums while adopting parking maximums, expanded transportation demand management, and updated institutional parking management plan requirements. It is important to note that with the amended ordinance moving away from parking minimums, the need for waiver requests when supply does not meet the minimum has been eliminated.

The 5-year JIPMP and annual updates will continue to demonstrate the current and anticipated parking supply and demand for each institution as well as the strategies employed to continue towards more efficient utilization of parking resources including TDM strategies to minimize the amount of parking demand. This policy step towards the City's climate action goals is expected to be bolstered in the near term by an upcoming transportation options study, which will recommend the policy framework for a comprehensive, citywide transportation demand management plan.

In parking management, efficiency-based standards are used to identify optimal parking supply. Such standards should primarily reflect strategic planning objectives, such as Burlington's goal for

reduced VMT and carbon emissions, and greater equity in the city's transportation system. Secondarily, but still important, efficiency-based standards should also reflect geographic, demographic and economic factors that affect parking demand, as well as the relative costs and benefits of different options. When applied comprehensively, efficiency-based standards should supply parking at the lower end of predicted demand ranges and supplement any lack of supply with alternative transportation demand management strategies.

Survey Trends on Travel Behavior

CATMA administers a survey annually to track the longitudinal travel behavior trends. In Fall of 2023, CATMA conducted a survey to its membership, including the three Hill institutions. The survey revealed the drive alone rates for the institutional user groups, including employees, students within a half mile, and students greater than a half mile from campus. It is noted that students within a short distance of their respective campus (i.e. less than a half mile) have the lowest drive alone rates. Within these distances, walking, biking, and campus transit modes meet the transportation demand effectively. Students with home locations outside of a half-mile radius of campus drive alone to campus at higher rates than their close to campus counterparts. Employees of each institution have similar drive alone rates, between 59% and 66%.

Table 2.3 Champlain College Drive Alone Mode Trend
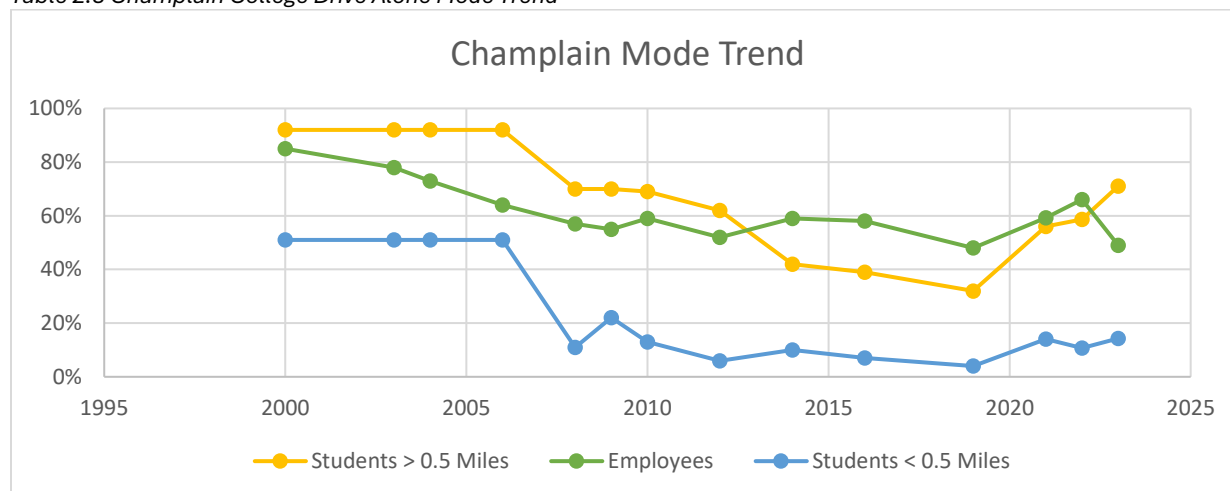
Table 2.4 UVM Drive Alone Mode Trend

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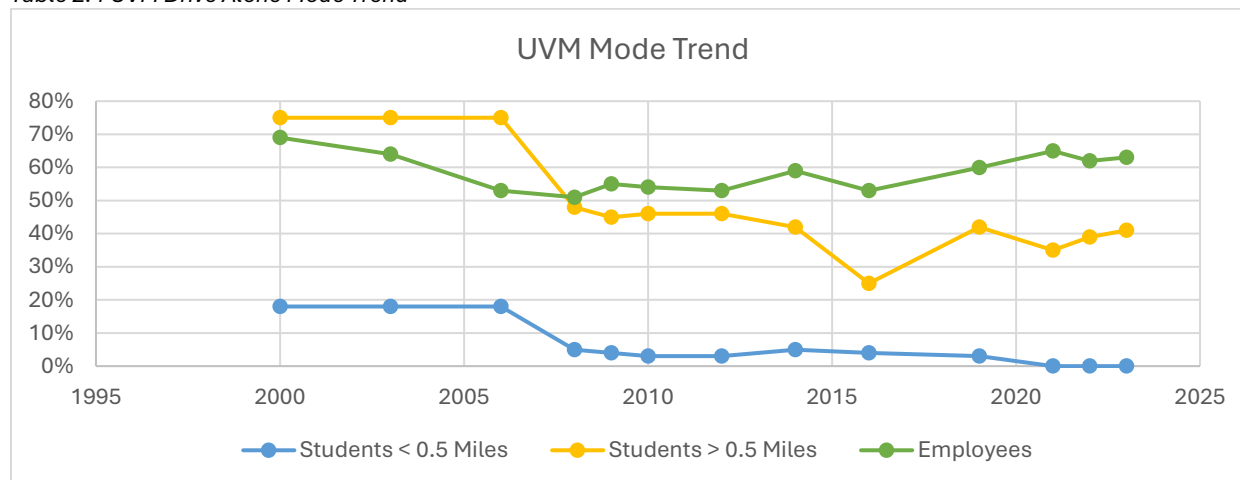
Table 2.5 UVMMC Drive Alone Mode Trend
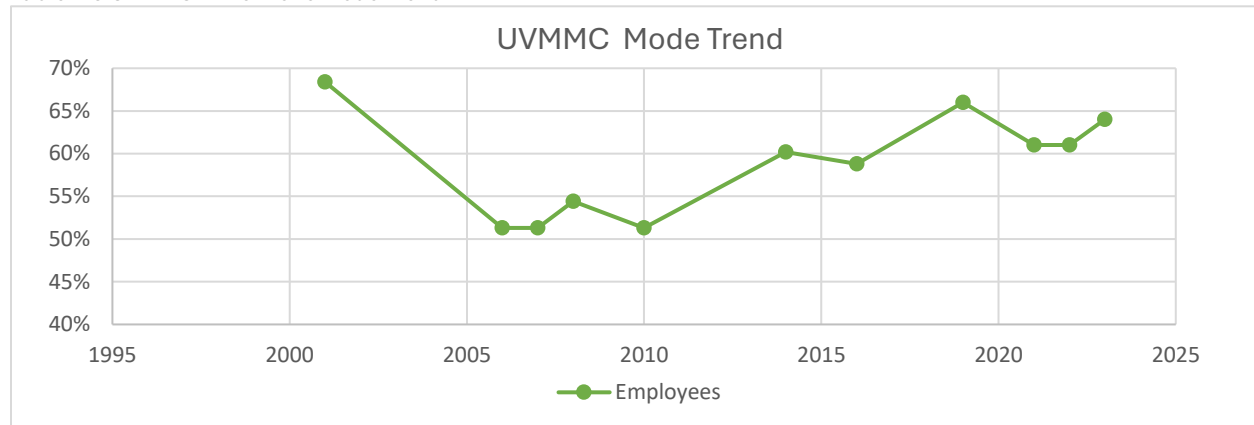
The 2023 CATMA Survey asked employee participants approximately how far away they live from where they work. For each institution, the rate of driving alone increases with distance. For UVM and Champlain College, telework becomes the primary mode for 50+ miles. Additionally, for distances 10-20 miles and beyond, telework, carpool, and riding the bus are the popular alternatives to driving. Walking is most popular for those living within a mile of their work, and biking is most popular between the 0.5 miles and 5-mile range. It's important to recognize the current local and regional rental market, and how it may impact the overall mode trends for each institution. According to the City of Burlington's 2023 Housing Report, the vacancy rate in Chittenden County is well below the balanced rate and one-third of Burlington renters are severely cost burdened. CATMA will continue to collect distance data moving forward to track distance and mode trends.

Table 2.6 Champlain College 2023 Employee Mode Split vs. Distance
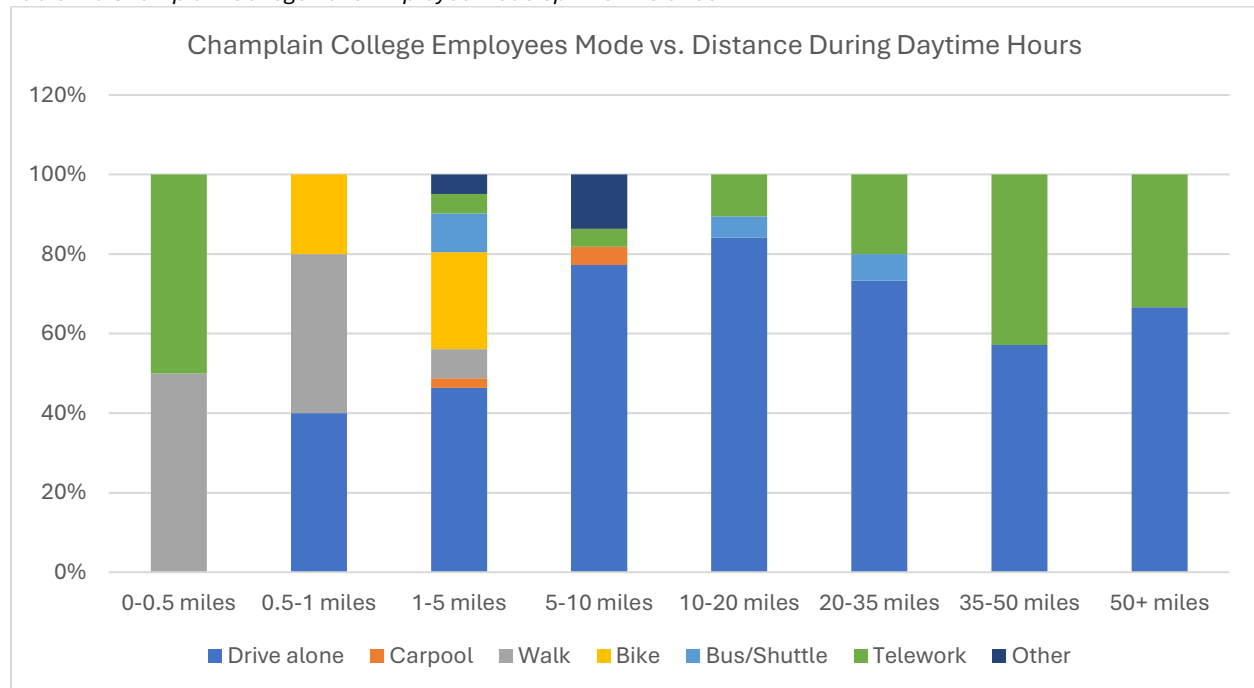
Table 2.7 UVM 2023 Employee Mode Split vs. Distance

UVM Daytime Employees Mode vs Distance
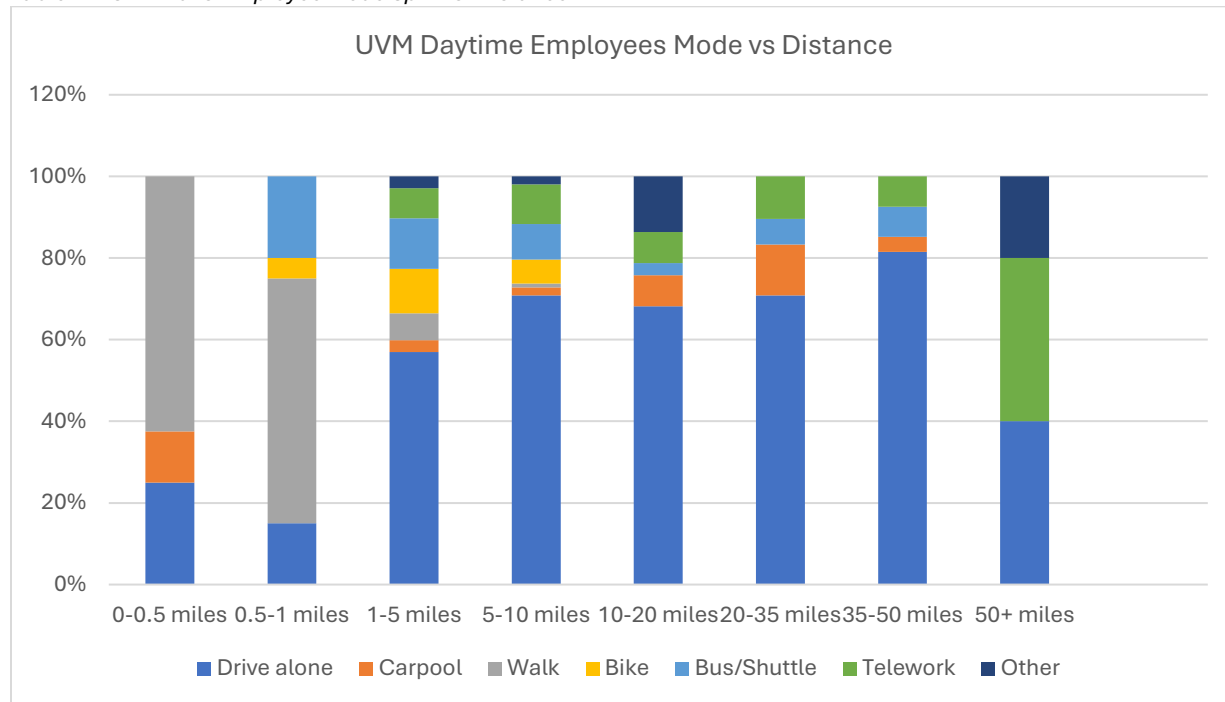
Table 2.8 UVMMC 2023 Burlington Site Employee Mode Split vs. Distance

UVMMC Daytime Employee Main Mode vs. Distance
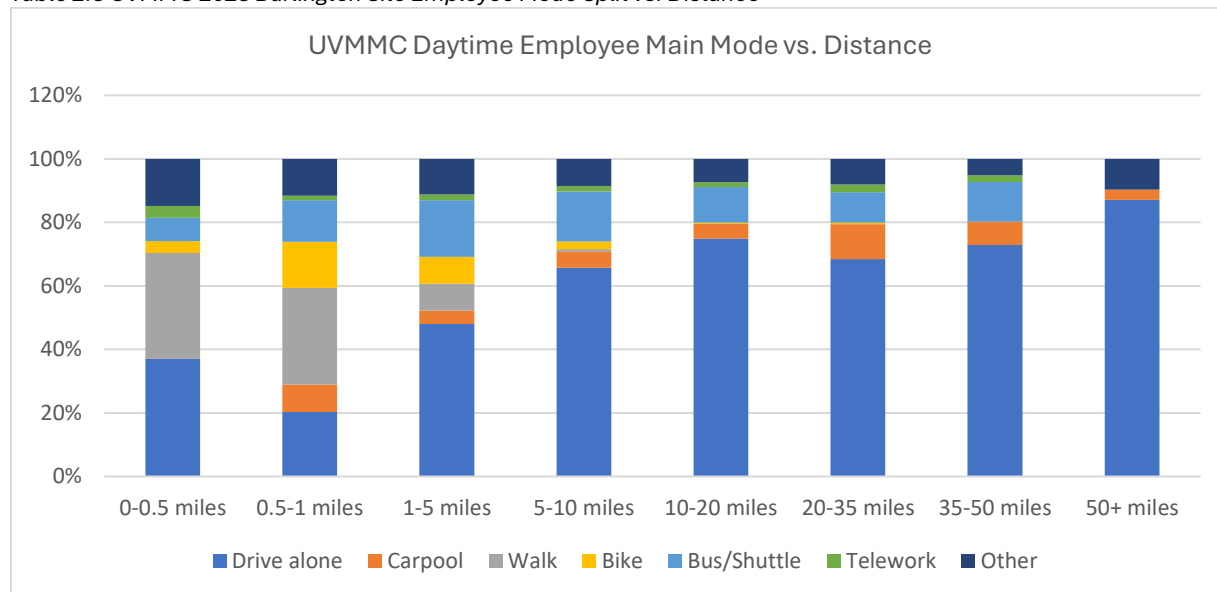
On-Street Parking Adjacent to Institutions

There are some institutional affiliates who park on-street in nearby neighborhoods during peak time

Table 2.9 On-Street Parking at Peak Times from CATMA Survey

	2023			2022		
	Champlain College	UVM	UVMMC	Champlain College	UVM	UVMMC
Students	7%	2.1%	N/A	5.6%	2.9%	N/A
Employees	12.5%	2.3%	1.6%	11.6%	3.8%	1.1%

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according to the CATMA survey administered to users in the Fall of 2023. Table 2.9 demonstrates the percent of students and/or employees that drive and are parking on nearby streets during peak times. Additionally, the survey asks participants which streets they typically park on when they park on-street. The streets reported in the 2022 survey remain popular in 2023.

In 2022, Champlain College employee and student survey participants both indicated that they primarily park on South Willard Street, Maple Street, and Summit Street. UVM employee survey participants indicated that they park on Prospect Street and Williams Street. UVM student survey participants did not have a popular street that is utilized. UVMMC survey participants indicated that they park on Colchester Avenue, and the other two popular streets were North Prospect and South Prospect. These streets in proximity to the campus areas are generally unregulated, making them free and open to public parking.

In February of 2024, the City of Burlington collaborated with the Chittenden County Regional Planning Commission to collect on-street parking counts in nearby neighborhoods in conjunction with the institutional parking counts. The counts occurred at 11am and 8pm on February 13, 2024, and February 14, 2024. See Table 2.10 below for results of streets that had a net change of more than 40% of parking supply.

Table 2.10 On-street parking counts for unregulated blocks. Top third of highest % change.

Street Name	Tuesday, February 13, 2024				Wednesday, February 14, 2024			
	Daytime	Nighttime	Net change	% of Parking Spots Change	Daytime	Nighttime	Net change	% of Parking Spots Change
S. Williams St (Main to College)	17	9	**-8**	**-47%**	16	15	**-1**	**-6%**
Main St (S. Williard to S. Williams)	11	8	**-3**	**-27%**	9	4	**-5**	**-56%**
Summit St (Maple to Main)	31	14	**-17**	**-55%**	31	15	**-16**	**-52%**
Maple St (Summit to S. Prospect)	9	1	**-8**	**-89%**	9	2	**-7**	**-78%**
Maple St (S. Williard to Summit)	24	8	**-16**	**-67%**	24	7	**-17**	**-71%**
S. Williard St (Cliff to Spruce)	9	5	**-4**	**-44%**	11	4	**-7**	**-64%**
Maple t (S. Union to S. Williard)	28	20	**-8**	**-29%**	26	15	**-11**	**-42%**
S. Winooski Ave (Howard to Spruce)	14	31	**17**	**55%**	17	26	**9**	**35%**
S. Winooski Ave (Elm Ter to Adams)	3	7	**4**	**57%**	5	6	**1**	**17%**
S. Winooski Ave (Spruce to Elm Ter)	3	8	**5**	**63%**	4	4	**0**	**0%**
S. Winooski Ave (Adams to Maple)	14	no data	**no data**	**0%**	9	16	**7**	**44%**

3. Collective Highlights and TDM Strategies

CATMA offers its founding institutions and associate members a comprehensive suite of Transportation Demand Management (TDM) incentives, programs and services that are essential to influence, support and encourage sustainable mobility options rather than driving alone. These programs aim to reduce single occupancy vehicle use, greenhouse gas emissions, vehicle miles traveled (VMT), and traffic congestion. As demonstrated in the mode trend tables in each institutional chapter, even if these options may not be used as primary means of accessing the campuses, they present feasible alternatives to driving and parking on site that can infrequently or frequently be used to offset parking demand, among other co-benefits. The individual chapters delver further into the strategies on each campus in regards to parking and TDM.

Transportation Demand Management

A comprehensive suite of TDM programs is essential to provide a commuter with connectivity options. Below is the suite of new and existing TDM programs, incentives, and services CATMA administers and manages for the institutions and its membership:
- ➤ Bike Share System and Discounts
- ➤ Bike/Walk Rewards Program
- ➤ Carpool and Vanpool Support Services
- ➤ CarShare Vermont Campus Program
- ➤ CATMA App (additional incentives, trip planning & event notices) implemented July 2023
- ➤ Commuter Champion Prize Drawings
- ➤ Education, Awareness, and Outreach
- ➤ Guaranteed Ride Home
- ➤ Off-site Parking and Shuttles
- ➤ Transit Programs (i.e. Unlimited Access, subsidized fares)
- ➤ Trip Planning App implemented July 2023

Off-Site Shared Parking and Shuttles
CATMA has a contract with Ride Your Bike, LLC for off-campus parking at 115 Lakeside Avenue lot. In 2023, the lease was 352 spaces of which UVM Medical Center utilized 252 spaces and Champlain College 100 spaces.

UVM Medical Center leases off-site parking at Technology Park in addition to parking spaces at UVM in close proximity to main campus. Each institution operates or contracts shuttle services to best meet the needs of their respective populations (outlined below) however, employees across institutions can utilize other institutions shuttles as needed, provided there is capacity for the institution's employees to utilize the service.

Green Mountain Transit (GMT)
Green Mountain Transit (GMT) offers many options for local and regional transit services for Champlain, UVM, and UVMMC affiliates. Local and some regional routes are available with stops on or close to each campus, with additional connections to the Downtown Transit Center for transfers to a broader range of destinations.

Funding contributions from the institutions have continued as part of the Unlimited Access Program, in part enabling GMT to remain fare free for the general public. With fares reinstated on May 20, 2024, Champlain and UVM will continue contributions on a pay-per-swipe basis to support their affiliates eligibility for free transit rides on any local or regional route with valid campus affiliation identification (i.e. the Unlimited Access Program) and UVMMC employees will be eligible for transit discounts via payroll deduction.

In general, ridership on GMT local routes have rebounded to near pre-pandemic levels and systemwide levels, as of January 2024, are -10.8% compared to pre-pandemic averages.

With GMT reinstating fares, we will receive data on actual ridership which will be included in the next JIPMP annual update.

Bike Share

CATMA along with Chittenden County regional partners launched an electric assist bikeshare system with [Bird](#) in July of 2023. Prior to July, the area did not have a system in place with the previous Gotcha bikeshare system defunct.

The Bird Electric Assist Bikeshare system of 200 electric-assist bikes can be accessed throughout Burlington, South Burlington, Winooski and the academic medical campus district. The system offers a dynamic hybrid system of Nests and lock up zones. Between July and December of 2023, the Bird system saw a 300% increase in trips from the previous docked system, with over 27,000 trips equaling 33,500 total miles ridden. The average trip was just under 10 minutes, averaging 1.25 miles, demonstrating a purpose driven system.

Bird system is $1 to unlock the bike, .49c per minute for the duration of your trip and is easily accessible through Bird's free [mobile phone application](#). Employees and Students at CATMA membership (City of Burlington, CCRPC, Champlain College, Seventh Generation, University of Vermont, UVM Medical Center, VHFA and YMCA) with valid work/academic email address are automatically eligible for a discount of 20% off each trip.

Carshare Vermont

CarShare Vermont is a local non-profit that aims to "provide an affordable, convenient, and reliable alternative to private car ownership." CarShare Vermont operates 26 vehicles that are shared by members throughout the Burlington area. UVM and Champlain College contribute funds directly to CarShare Vermont to support a Campus Program. Affiliates are eligible to participate in CarShare's subsidized Campus Plan. Of CarShare's current 997 members, approximately 16% are subscribed to the Campus Plan and do not have a permit to park on their respective campus. This plan provides a generous discount on annual membership. There are additional campus affiliates that have membership through alternate rate plans (e.g. CarShare offers a free membership for income-eligible households). It is noted that campus affiliates use all CarShare vehicles in service and not just those located at UVM and Champlain. CarShare Vermont contributes to a reduction in vehicle ownership among its members. According to its 2023 Member Survey, 56% of members reported that they got rid of or avoided buying a vehicle. It is estimated that for every vehicle CarShare Vermont puts in service, 15 privately owned vehicles are removed. This provides many communal benefits, including reduced demand for parking. See Appendix B for more information on Carshare Vermont.

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Monitoring and Evaluating Transportation Demand Management

CATMA and the "Hill" institutions work together to deliver a comprehensive suite of Transportation Demand Management strategies. These strategies aim to reduce traffic congestion and parking demand for the institutions on the "Hill" by encouraging and educating employees and students about alternative modes of transportation rather than driving alone.

The effectiveness of these strategies is measured by looking at the trends of surveyed mode splits, parking demand estimations, and lot utilization counts over time. A matrix of metrics was created in the 2023-2028 JIPMP to provide a tool to visualize the collective TDM strategies and demonstrate how the various programs perform, interact, and complement each other. The metrics also inform the institutions on progress in improving employee and student use of alternatives modes.

It is important to note that the mode split data in these tables represent survey respondents self-reported primary mode, or mode they use with the most frequency, even though many utilize multiple strategies to meet their transportation needs getting to and from each institution. For instance, someone that drives alone 3 days a week and teleworks 2 days a week would be overrepresented in the drive alone category and underrepresented in the telework category.

Table 3.1 Champlain College TDM Metrics

Champlain College						
	2023		**2022**		**2019**	
	Employees	**Off Campus Students**	**Employees**	**Off Campus Students**	**Employees**	**Off Campus Students**
Primary Mode Split[1]						
Drive Alone	47%	62%	66%	45%	48%	14%
Carpool	1%	2%	2%	1%	2%	7%
Walk/Wheelchair	10%	10%	7%	23%	22%	42%
Bike	12%	5%	8%	5%	5%	2%
Public Bus	12%	14%	5%	7%	15%	17%
Telework[2]	13%	N/A	8%	N/A	N/A	N/A
Other	5%	7%	4%	19%	8%	18%
Peak Parking Estimation and Counts						
Future Net Peak Parking Demand Estimation (Survey)		-350		-350		+69
Net Spaces Peak Utilization (2023 Lot Counts)		+202		+215		+111
TDM Program Metrics						
GMT Unlimited Access Ridership (# of rides)[3]		N/A		N/A		42,776
CATMA App/Agile Mile Metrics (June 2023-Dec 2023)[4]						
Total Members		110		N/A		N/A
Active Participants		30		N/A		N/A
Active Participation Rate		27%		N/A		N/A
Recorded Trips		4,193		N/A		N/A
Reduced VMTs		36,225		N/A		N/A
Reduced CO2 (tons)		15.8		N/A		N/A
Average Parking Spots Saved Per Week		14		N/A		N/A
Bike Walk Reward Users		13		38		87
CarShare Vermont (October 2023-Dec 2023)[5]						
Carshare Vermont Campus Plan Membership		26	17	28	18	63
Trip Count		428		N/A		N/A
Miles Drive		12,455		N/A		N/A
Trip Duration		1,956		N/A		N/A
Bird Bikeshare (July 2023-Dec 2023)[6]						
Riders from Champlain College		96		N/A		N/A
Trips		80		N/A		N/A
Average Miles		1.51		N/A		N/A
Average Duration		9.74		N/A		N/A

1 Mode Split data is from CATMA's 2019, 2022 & 2023 surveys and represent all times, not just peak times. Refer to Table 10.1 for Champlain College's Peak Parking Demand

2 CATMA did not collect Telework data in the 2019 survey

3 There is no institution specific GMT data as the bus has been fare free as of March 2020

4 CATMA App Launched in June 2023

5 Aggregate campus data was not provided until October 2023 when CarShare Vermont's software system was enhanced to allow a breakdown by specific school (UVM and Champlain College).

6 Bird Bikeshare launched in July 2023

Table 3.2 University of Vermont TDM Metrics

University of Vermont						
	2023		**2022**		**2019**	
	Employees	**Off Campus Students**	**Employees**	**Off Campus Students**	**Employees**	**Off Campus Students**
Primary Mode Split[1]						
Drive Alone	63%	27%	62%	30%	60%	24%
Carpool	5%	2%	4%	5%	7%	5%
Walk/Wheelchair	6%	36%	7%	34%	10%	37%
Bike	4%	7%	5%	6%	8%	10%
Public Bus	9%	25%	6%	23%	9%	15%
Telework[2]	7%	N/A	7%	N/A	N/A	N/A
Other	6%	0%	9%	2%	6%	9%
Peak Parking Estimation and Counts						
Future Net Peak Parking Demand Estimation (Survey)		+515		+515		+277
Net Spaces Peak Utilization (2023 Lot Counts)		+1,718		+1357		+803
TDM Program Metrics						
GMT Unlimited Access Ridership (# of rides)[3]		N/A		N/A		292,017
Carpool Permits Issued	105	N/A	100	N/A	34	N/A
CATMA App/Agile Mile Metrics (June 2023-Dec 2023) [4]						
Total Members		639		N/A		N/A
Active Participants		186		N/A		N/A
Active Participation Rate		29%		N/A		N/A
Recorded Trips		23,932		N/A		N/A
Reduced VMTs		142,562		N/A		N/A
Reduced CO2 (tons)		62.3		N/A		N/A
Average Parking Spots Saved Per Week		76		N/A		N/A
Bike Walk Reward Users		86		262		664
CarShare Vermont (October 2023-Dec 2023) [5]						
Carshare Vermont Campus Plan Membership		244	57	194	58	274
Trip Count		315		N/A		N/A
Miles Driven		10,502		N/A		N/A
Trip Duration (hours)		1,238		N/A		N/A
Bird Bikeshare (July 2023-Dec 2023) [6]						
UVM Riders		426		N/A		N/A
Trips		1,185		N/A		N/A
Average Miles		1.13		N/A		N/A
Average Duration (minutes)		8.35		N/A		N/A

1 Mode Split data is from CATMA's 2019, 2022 & 2023 surveys and represent all times, not just peak times. Refer to Table 10.2 for UVM's Peak Parking Demand

2 CATMA did not collect Telework data in the 2019 survey

3 There is no institution specific GMT data as the bus has been fare free as of March 2020

4 CATMA App Launched in June 2023

5 Aggregate campus data was not provided until October 2023 when CarShare Vermont's software system was enhanced to allow a breakdown by specific school (UVM and Champlain College).

6 Bird Bikeshare launched in July 2023

Table 3.3 UVM Medical Center TDM Metrics

UVM Medical Center						
	2023		**2022**		**2019**	
	Main Campus	**1 South Prospect**	**Main Campus**	**1 South Prospect**	**Main Campus**	**1 South Prospect**
Primary Mode Split[1]						
Drive Alone	63%	78%	60%	72%	64%	79%
Carpool	6%	2%	6%	4%	7%	5%
Walk/Wheelchair	5%	4%	6%	3%	5%	4%
Bike	3%	0%	3%	1%	3%	2%
Public Bus	4%	3%	5%	3%	5%	4%
Telework[2]	1%	9%	1%	12%	N/A	N/A
Other	18%	4%	19%	5%	16%	6%
Peak Parking Estimation and Counts						
Future Net Peak Parking Demand Estimation (Survey)		+355		+355		+179
Net Spaces Peak Utilization (2023 Lot Counts)		+492		+559		+101
TDM Program Metrics						
GMT Unlimited Access Ridership (# of rides)[3]		N/A		N/A		241
Carpool Permits Issued	520	N/A	427	N/A	478	N/A
CATMA App/Agile Mile Metrics (June 2023-Dec 2023)[4]						
Total Members		491		N/A		N/A
Active Participants		128		N/A		N/A
Active Participation Rate		26%		N/A		N/A
Recorded Trips		15,401		N/A		N/A
Reduced VMTs		51,655		N/A		N/A
Reduced CO2 (tons)		22.3		N/A		N/A
Average Parking Spots Saved Per Week		50		N/A		N/A
Bike Walk Reward Users		161		251		440
Bird Bikeshare (July 2023-Dec 2023)[5]						
Riders		11		N/A		N/A
Trips		82		N/A		N/A
Average Miles		0.67		N/A		N/A
Average Duration		5.16		N/A		N/A

1 Mode Split data is from CATMA's 2019, 2022 & 2023 surveys and represents all times not just peak time. Refer to table 10.3 for UVMMC's Peak Parking Demand.

2 CATMA did not collect Telework data in the 2019 survey

3 There is no institution specific GMT data as the bus has been fare free as of March 2020

4 CATMA App Launched in June 2023

5 Bird Bikeshare launched in July 2023

4. Champlain College

Champlain College is a small, private, not-for-profit college in Burlington with sister campuses in Montreal, Canada and Dublin, Ireland. Champlain College prides itself on preparing students for top fields through career-oriented programming, earning accolades such as Princeton Review's "Top Schools for Game Design," the Broadcast Education Association's "Top Documentary Programs," and one of Niche.com's top 30 "Best Schools for Information Technology." Champlain College has been named "Most Innovative School" in the North seven years in a row by U.S. News & World Report's "America's Best Colleges."

Champlain College's main campus sits atop the hill overlooking downtown Burlington and Lake Champlain. The main campus is primarily concentrated between Main Street and Cliff Street to the north and south and Summit Street and South Union Street to the east and west. There are additional residence halls just north of Main Street and east of Summit Street as well as downtown apartments at the corner of St. Paul Street and Maple Street, four-tenths of a mile from the main campus. In addition, there are academic and facility buildings located approximately 1.3 miles from main campus off of Lakeside Avenue and Sears Lane.

Current Conditions

Users (Students, & Employees)

Champlain College is a small college with 1,786 students based on the Burlington campus, with 1,559 students based abroad or online, making for 3,345 current enrollments. Champlain employs 588 staff members based on the Burlington campus. Champlain has 343 full-time employees, 245 part-time employees, and 78 contracted employees based in Burlington. In 2022, Champlain College employed 612 full-time and part-time employees, and had 1,736 students on campus.

Existing and Anticipated Infrastructure and Development

There are 47 buildings that provide Champlain College with just over 704,000 gsf of academic, administrative, residential, athletic, dining, and facility space across the campus. Champlain College recently conducted a building analysis and found discrepancies in the gross square footage calculated in previous years. Due to these discrepancies, the gross square footage decreased from 851,517 gsf to 704,338 gsf. Over half of the buildings are small residential halls with a total of 1,418 beds across all locations. These residential beds serve the majority of students that are enrolled in on campus programming. The campus infrastructure includes 642 spaces for parking, serving the range of users that access the campus or reside on campus.

Table 4.1 Current GSF, number of buildings, residential beds, and parking supply for Champlain College.

Infrastructure	Existing[4]	Units
Number of Buildings	47	buildings
Gross Square Footage[1]	704,388	gsf
Residential Beds[2]	1,418	bed
Parking Supply[3]	642	spaces

1. Leased facilities do not contribute to the number of buildings or total GSF
2. Residential beds in leased facilities included in total
3. Parking spaces from leased facilities include
4. Based on data from Fall 2023

Project Updates

There are no changes to the projects described in the previous [2023-2028 JIPMP.](#)

Parking Demand

The current and future projections of parking demand can be found in the [2023-2028 JIPMP.](#) In this 5-year Plan, there was a projected future imbalance of parking demand and supply 5 years in the future. In the past year, Champlain's student population has not grown as rapidly as projected, which also modifies faculty and staff population. At this time, Champlain does not predict they will meet the number of users forecasted in the 2023-2028 JIPMP.

Parking Counts & Utilization

In the Fall of 2019 Champlain College in collaboration with CATMA began conducting quarterly lot counts to gain a better view of parking lot utilization over time. The maximum parking utilization was compared across the available data from previous peak period observations to demonstrate changes over time. The parking utilization trends in Figure 3.1 show there was significantly diminished utilization through the Fall 2020 to Summer 2021 period, resulting in peak period utilization of approximately 30%. Utilization, starting in Fall 2021, rebounded to a maximum peak utilization of 67% in Fall 2021 and again in Fall 2022 and Fall 2023. This remains below the peak utilization demonstrated in Fall 2019 of 84% and Winter 2020 of 75% (prior to the COVID pandemic).

Table 4.2 Peak Parking Utilization at Champlain College from Fall 2019 to Fall 2023.
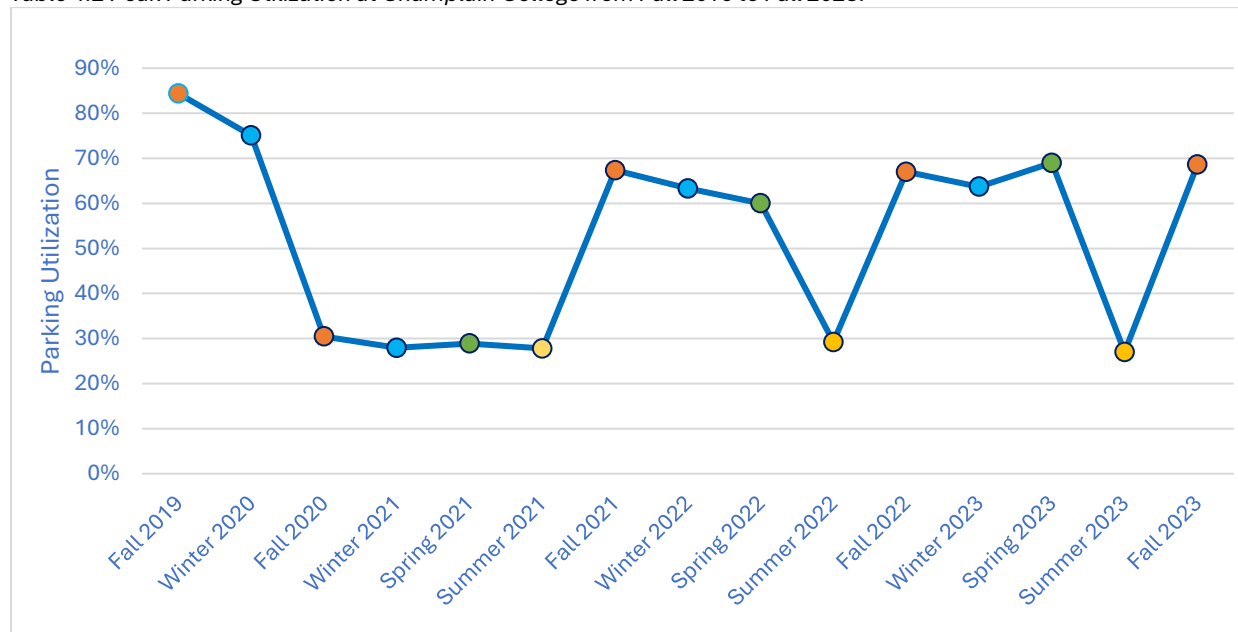
Commute Trends & TDM Strategies

Commute Trends

- 47% of Champlain College employees drive alone as their primary commute mode
    - This is a near 10% decrease in drive alone rate compared to 2022
    - This significant decrease is likely due to how far survey participants live from their work. We found that 42% of employees reported living within 5 miles of their worksite and as shown above in Table 2.6, an overwhelming majority of people within 5 miles are taking a sustainable mode to work.
    - Telework increased by 5% compared to 2022
- 14% of students who live within a half mile of campus drive alone as their primary mode
    - In 2022 it was 11%
- 71% of students who live outside a half mile of campus drive alone as their primary mode
    - In 2022 it was 59%
- These trends reflect all times, not just peak time. Refer to table 10.1 for Champlain College's Peak Parking Demand.

Since 2021, we've seen an increase in drive alone rate for off-campus students compared to pre-pandemic levels. As stated above, this could be attributed to isolating behaviors adopted during the COVID-19 pandemic and the current local and regional rental market. The vacancy rate in Chittenden County is well below the balanced rate and one-third of Burlington renters are severely cost burdened. With these factors in mind, students may be living farther away from campus than in previous years and thus driving more. Compared to the 2022 CATMA Survey, the 2023 Survey saw a 15% increase of students who live farther than 5 miles from main campus. This explains why the survey data reports that more students are driving to campus compared to previous years. Conversely, we see a decline in the employee drive alone rate compared to 2022 levels. This is paired with a nearly equal increase in telework.

Table 4.3 Mode split (2023) for Champlain employees and off-campus students (by distance of home from campus).[1]
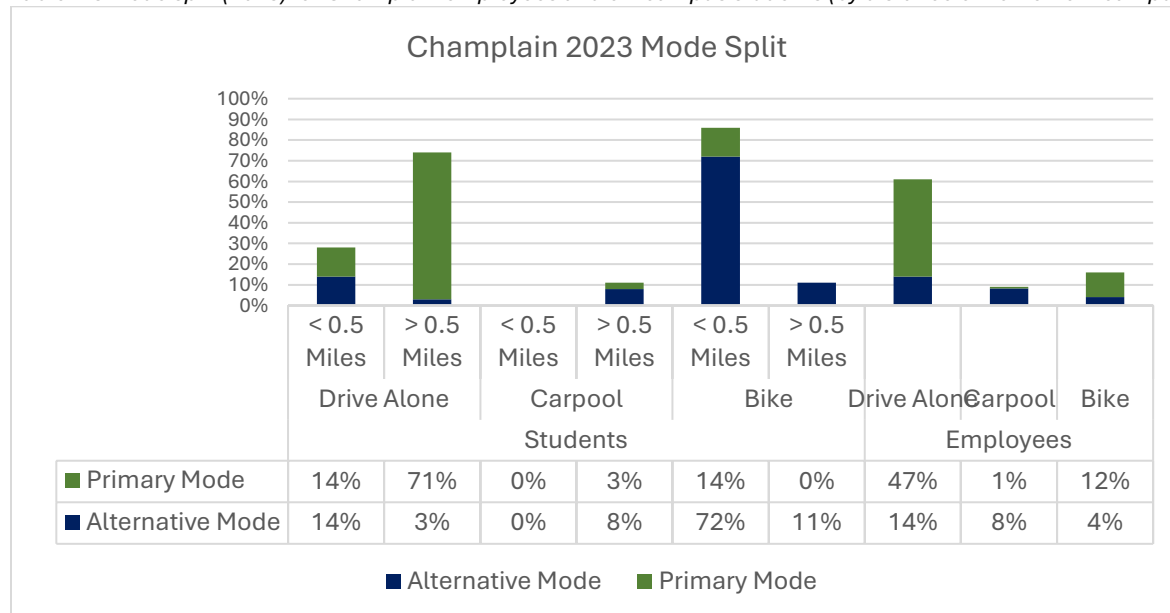
Champlain 2023 Mode Split

| | Drive Alone | | Carpool | | Bike | | Drive Alone | Carpool | Bike |
| | < 0.5 Miles | > 0.5 Miles | < 0.5 Miles | > 0.5 Miles | < 0.5 Miles | > 0.5 Miles | | | |
	Students						Employees		
■ Primary Mode	14%	71%	0%	3%	14%	0%	47%	1%	12%
■ Alternative Mode	14%	3%	0%	8%	72%	11%	14%	8%	4%

[1]*Alternative modes are methods to commute to work that may be utilized once every so often but are not the primary commute mode.*

Table 4.4 Employee mode split (2023) for Champlain College

Champlain Colllege Employee Primary Mode

- Drive Alone
- Carpool
- Walk
- Bike
- Bus/Shuttle
- Telework
- Other

Drive Alone 47%
Carpool 1%
Walk 10%
Bike 12%
Bus/Shuttle 12%
Telework 13%
Other 5%
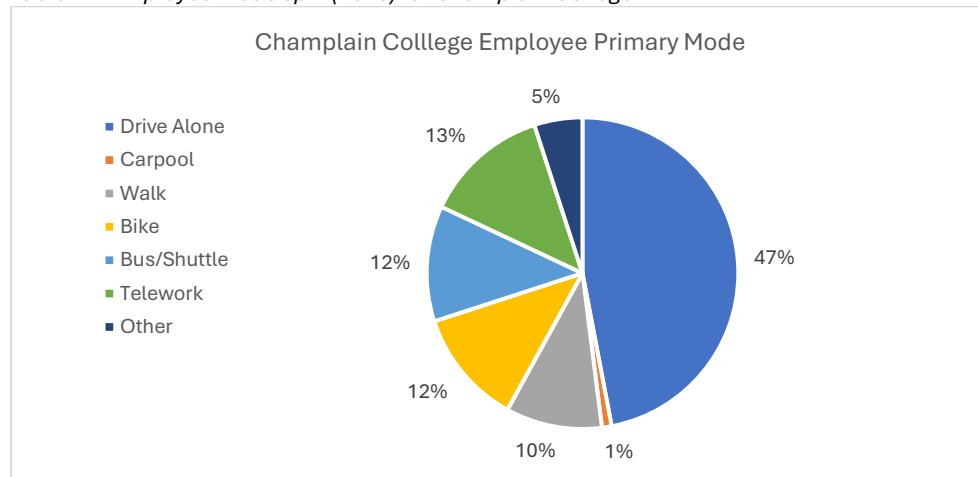
Table 4.5 Off-Campus Student mode split (2023) for Champlain College.

Champlain College All Off-Campus Student Primary Mode[1]

- Drive Alone
- Carpool
- Walk
- Bike
- Bus/Shuttle
- Other

Drive Alone 62%
Carpool 2%
Walk 10%
Bike 5%
Bus/Shuttle 14%
Other 7%
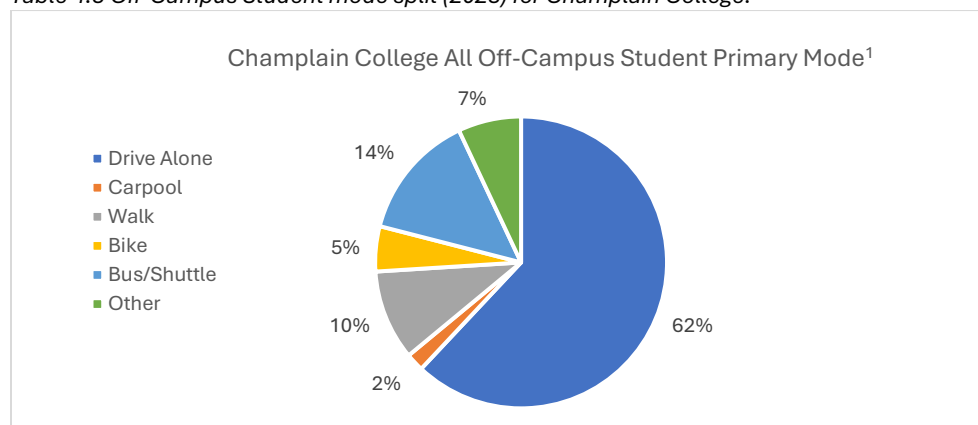
1. The off-campus mode rates are collective rates between those living within and beyond a half mile from campus, to see a breakdown of living distance and modes, refer to Table 4.3 above.

Fleet

Champlain College has a total of 15 fleet vehicles on their campus in designated "Service Only" spaces. Four passenger vans are typically parked in Rowell and Cushing, and eleven pick-up trucks and facilities vehicles are typically parked in the Sears Lane lot near the facilities building. There are no current plans to grow the fleet.

TDM and Congestion Management Strategies

Telework

Champlain College provides an Interim Workplace Flexibility policy that was updated in December 2022. The workplace flexibility is opportunity to support employees' safety, work life, along with their personal and family responsibilities while still supporting the College's need for coverage, efficiency, and productivity. The workplace flexibility assesses the job and employee's suitability prior to approving a work arrangement. This varies depending upon the employee's role and the specific nature of the work required. The work arrangement can be occasional, hybrid, or fully remote and approval is at the supervisor's discretion and must be reviewed with the functional area's Dean, Vice President, COO, or Provost.

Permits & Other Regulated Uses

Champlain College diligently monitors and enforces the parking plan through the year, with parking enforced 24 hours per day, 7 days per week. Further, every Champlain College affiliate, employees and students alike, are required to get a parking pass for their vehicle every semester. Lots on the main campus in close proximity to academic buildings are either designated for main campus employees with an appropriate permit (i.e. Zone 1 permit holders) or pay per use on weekdays between 8 AM and 4 PM for appropriate permit holders. It is noted that the pricing is structured to be most expensive in the lots closest to the core of campus and in the highest demand, with lots further out becoming less expensive.

Champlain College made an agreement with the City of Burlington to allow a small number of locations where on-street parking is permitted for Champlain affiliates. It was agreed that all other streets on the "Hill" are prohibited to affiliate parking. Champlain College maintains parking enforcement to discourage misuse of on street parking around campus, as well as campus lots monitored and patrolled daily. The streets that are frequently utilized by College employees and students are streets that fall within 2 blocks of the campus. Affiliated vehicles can be ticketed in accordance with Champlain College's parking policy. The College issued 729 citations and 1,231 warnings during the 2022-2023 school year and 2023 summer programming. This is less than during the 2021-2022 school year and 2022 summer where there were a collective 2,519 citations and warnings given.

In the Fall of 2023, Champlain College issued 781 total permits—401 student permits, 342 employee permits, 20 disabled, and 18 contractor permits. In 2022, the total number of permits issued was 793.

On-Campus Shuttles

There is free commuter parking at 175 Lakeside Avenue for Zone 1 permit holders. Champlain operates a free shuttle service seven days a week between Lakeside Campus, 194 Saint Paul Street, and Main Campus. All Zone 2 permit holders are automatically enrolled in CATMA's Guaranteed Ride Home program, which provides a free cab ride if the shuttles are not operating. All Zone 1 permit holders are also eligible to enroll. Locations of the Champlain shuttles can be tracked in real-time providing up to date information to users via website or mobile app.

Table 4.6 Champlain campus shuttle schedule for Fall 2023.

Routes	Days	Times	Runs Every (Minutes)	Buses Running
Weekday Off-Peak	Mon - Fri	7am-8am, 7pm-10pm	9	1
Weekday On-Peak	Mon - Fri	8am - 7pm	9	1
Weekend	Sat - Sun	10am - 8pm	18	1

Transit

Green Mountain Transit has been fare free since March 2020 with fares return in May 2024. As a result, there is no data on ridership since March 2020. As mentioned, Champlain College has provided Green Mountain Transit with annual funding while fares were free to help support transit.

Champlain College is recognized as a "Silver-level Bicycle Friendly University". Champlain employees and students have access to bike racks throughout campus as well as indoor bike storage in certain buildings. There are accessible showers on campus for those who bike. Bicycle pumps and other tools are located throughout campus. Champlain affiliates are eligible for a 20% discount on Bird bikeshare system.

Climate Plan

Sustain Champlain is the overarching campaign for Champlain College to integrate sustainability into the entire campus. Sustain Champlain focuses on institution, operations, academics, and culture. Under their operations section they provide resources for transportation initiatives such as CATMA memberships, access to free rides on GMT buses, shower facilities for bicyclists, additionally locations to access bike parking, shuttle stops, and CarShare vehicles. In 2015, Champlain College revisited their Active Transportation Plan which sets out to reduce motorized vehicle use for Champlain affiliates, create an active transportation culture, decrease CO2 emissions, and create safe, functional, and environmentally friendly transportation options for employees and students.

5. University of Vermont

Founded in 1791, the University of Vermont has been a cornerstone of Burlington throughout the period following European settlement of the area, established prior to the founding of the City itself. The University is a medium sized public university and land grant institution that is considered a "Public Ivy." This designation is based on the strength of selective and rigorous undergraduate educational programming as well as renowned research. Known as UVM, or University of the Green Mountains in Latin, the University prides itself on being the ideal size to foster academic and research prominence while encouraging close faculty-student mentorships across all levels of study. The location of UVM as part of the fabric of Burlington and the state of Vermont, and in close proximity to Lake Champlain and the Green Mountains, enriches student educational experience and enables service to the state's communities through its land grant mission.

Current Conditions

Users (Students, & Employees)

The University of Vermont is the largest academic institution in the state with 14,320 total enrollments, up from 14,088 last JIPMP. In Fall 2023, UVM had 11,614 undergraduate students, 1,664 graduate/certificate students, 488 medical students, and 554 non-degree continuing education students. Employment at UVM in Fall 2023 was 4,406 faculty and staff, up from 4,254 last JIPMP. There were 3,563 full-time employees and 843 part-time employees.

Existing & Anticipated Infrastructure and Development

There are 200 buildings and an additional 29 accessory buildings that serve the University, accounting for over 5.6M gross square footage. The buildings serve academic, research, residential, administrative, athletic, student support, facilities, and other purposes. Of these buildings, 79 support academic and research purposes and 51 support residential purposes. The residential buildings support 5,775 beds for students to reside on campus with an additional 617 beds for students and 164 beds for faculty and staff provided through third party partnerships.

Table 5.1 Current GSF, parking requirements, and parking supply for UVM.

Infrastructure	Existing[4]	Units
Number of Buildings	200	buildings
Gross Square Footage[1]	5,651,108	gsf
Residential Beds[2]	5,775	bed
Parking Supply[3]	4,956	spaces

1. Leased facilities do not contribute to the number of buildings or total GSF
2. Residential beds in leased facilities included in total
3. The existing parking supply does not include leased facilities, this includes 351 Pine Street
4. Based on data from Fall 2023

Parking Demand

The current and future projections of parking demand can be found in the 2023-2028 JIPMP and above on page 4.

Project Updates

The 2023-2028 JIPMP identified many projects that require status updates in the annual JIPMP update. Of the projects that were estimated to be finished in 2023, the Patrick Leahy Building project was completed, and the Centennial Compound and Bioresearch Complex Parking are estimated to be completed in 2024. In addition, there are projects that were previously identified that no longer have plans to move forward, including 284 East Avenue and the University Road (East Ave Compound). Several other projects' completion times have been extended. See all changes to UVM projects from the 2023-2028 JIPMP in the table below.

In South Burlington, UVM will partner with third parties to lease 180 beds at Catamount East starting in 2024, along with 620 beds for graduate and medical students, faculty, and staff at Catamount Run when the project is fully completed in 2025. Primarily the on campus residential beds are for first- and second-year undergraduate students, as they are generally required to live on campus.

Table 5.2 UVM projects and subsequent change in parking spaces

Project Name	Change in Building Area (gsf)	Associated Change in Parking	Est. Completion	Changes from previous JIPMP
Patrick Leahy Building	6,408	-1	2023	Completed
Centennial Compound		40	2023	Est. completion 2024
Bioresearch Complex Parking	0	153	2023	Est. competition 2024
Waterman	3,000	-10	2024	In design. May not impact square footage
Votey Lot		-10	2024	Est. completion 2025
Torrey Hall Addition	2,860	-6	2024	Est. competition 2025
Future Student Housing	100,000	0	2025	Est. completion 2026
Future Additional Parking to Accommodate New Housing		200	2025	Est. competition 2026
Colchester Research Facility Lot 1 Parking		200	2025	Est. completion 2026

University Road (East Ave Compound)		15	2025	Not moving forward at this time
Future Student Housing	150,000	-25	2026	Est. competition 2027
Future Additional Parking to Accommodate New Housing		200	2026	Est. completion 2027

Lot Counts and Parking Utilization

In the Fall of 2019 UVM in collaboration with CATMA began conducting quarterly lot counts to gain a better view of parking lot utilization over time. As previously discussed, the peak parking demand was estimated using two methodologies: utilization counts and survey data. The parking supply for the campus is currently 4,956 spaces. Sites within the campus that UVM ground leases (and their associated parking spaces), such as Redstone Lofts, Redstone Commons, and Centennial Court Faculty/Staff Apartments, are not included in this total. All the counts conducted at UVM have not exceeded the mark of 90%, a metric that is widely used for the maximum effective capacity for off-street parking by planners at similar institutions across the country[2].

Table 5.3 Graph of parking utilization at UVM from Fall 2019 to Fall 2023
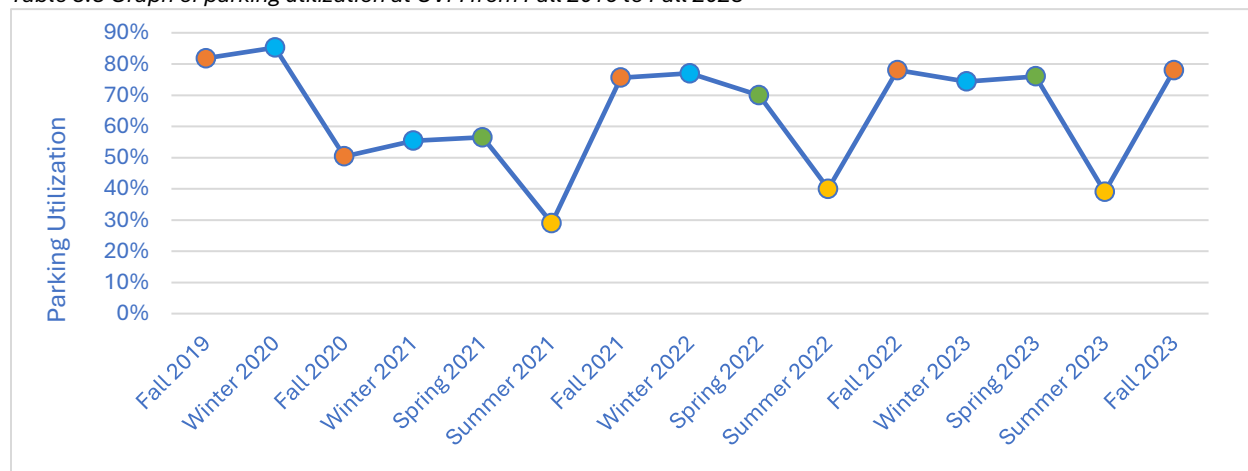
Unique Commute Trends & TDM Strategies

Commute Trends

- 63% of UVM employees drive alone as their main mode to commute
  - This is just slight increase from last year where 62% of employees drove alone in 2022
- 0% of UVM students that live within a half mile of main campus drive alone as their main mode
  - This number has not changed since 2021

- 41% of UVM students living outside a half mile of main campus drive alone as their main mode
  - A slight increase from 39% in 2022
- These trends reflect all times, not just peak time. Refer to table 10.2 for UVM's Peak Parking Demand.

Table 5.4 Mode split (2023) for UVM employees and off-campus students (by distance of home from campus).1
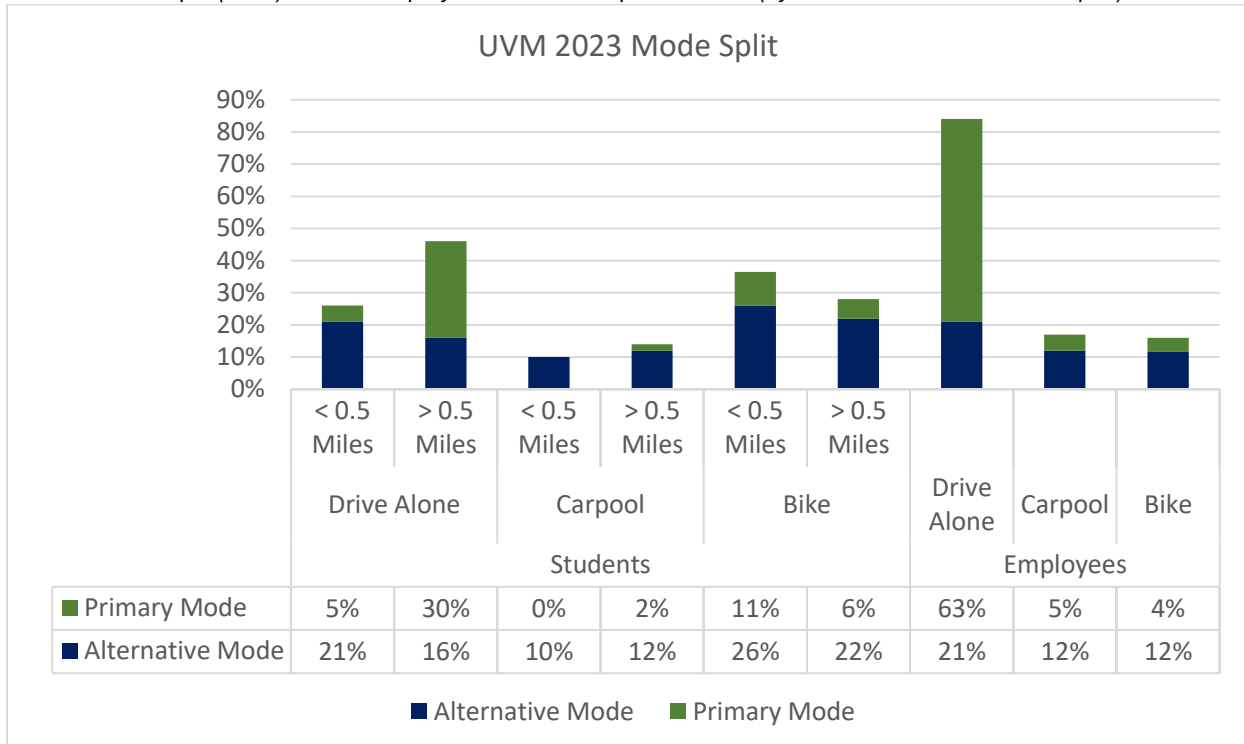
UVM 2023 Mode Split

	< 0.5 Miles	> 0.5 Miles	< 0.5 Miles	> 0.5 Miles	< 0.5 Miles	> 0.5 Miles	Drive Alone	Carpool	Bike
	Drive Alone		Carpool		Bike				
	Students						Employees		
Primary Mode	5%	30%	0%	2%	11%	6%	63%	5%	4%
Alternative Mode	21%	16%	10%	12%	26%	22%	21%	12%	12%

■ Alternative Mode ■ Primary Mode

[1] Alternative modes are methods to commute to work that may be utilized once every so often but are not the primary commute mode.

Table 5.5 Employee mode split (2023) for UVM.

2023 Employee Mode Split

- Drive Alone — 63%
- Carpool — 5%
- Walk — 6%
- Bike — 4%
- Bus/Shuttle — 9%
- Telework (Work Remotely) — 7%
- Other — 6%

Table 5.6 Off-campus student mode split (2023) for UVM.

Fleet

UVM has 214 fleet vehicles that park throughout the main campus and other off campus locations. The fleet vehicles parked in Howe and Votey parking lots have designated "Service Only" spaces. The other lots the fleet vehicles are parked in have a combination of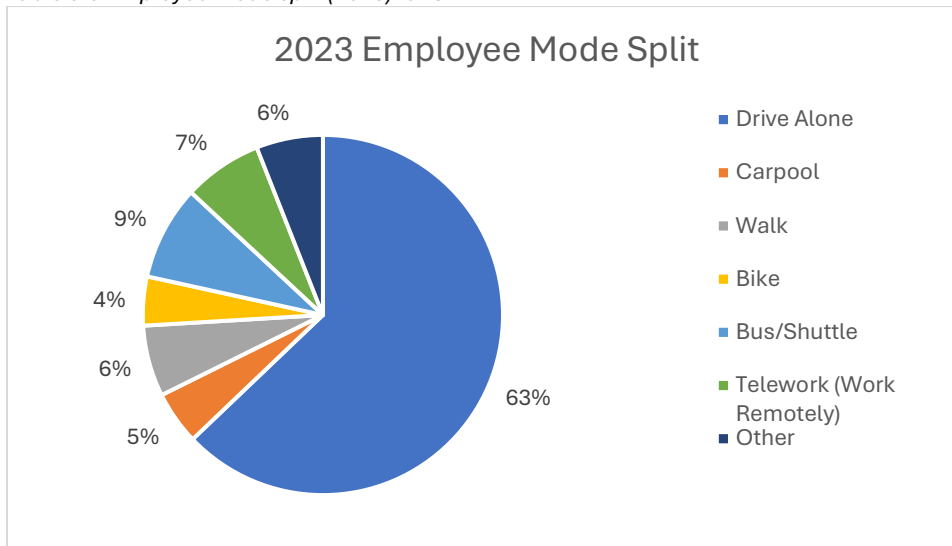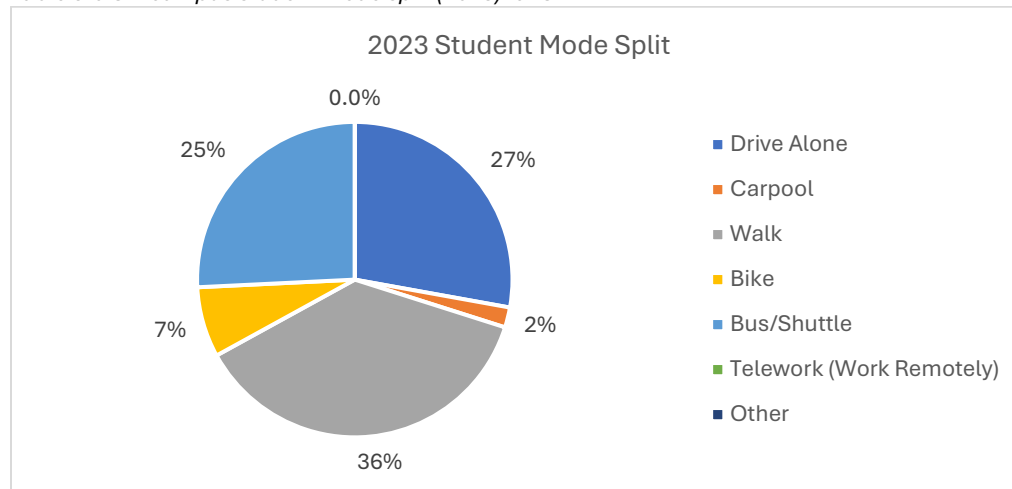 spaces, including designated "Service Only" spaces. Ambulances are parked in the Rescue Building and CATS shuttle buses are parked in Catamount West when not in use. CATS shuttle buses may be parked at the Bioresearch Complex in the future.

TDM and Congestion Management Strategies

Telework Policy

UVM offers flexible working arrangements and telework policies. Telework requests are reviewed on a case-by-case basis in the context of established and consistent guidelines. Telework requests are approved or denied at the discretion of the appropriate Dean, Vice President or Vice Provost and may be discontinued at any time at the University's sole discretion.

Permits & Other Regulated Uses

The University of Vermont provides clear guidance for all campus community members to follow regarding parking policies. It is mandatory that all UVM affiliates obtain a permit for their vehicles each semester. Permits are affiliated with specific parking zones.

First year students living in residential halls are prohibited from registering a vehicle for campus parking. The University has determined approved, eligible employment and documented medical needs to be the only exceptions. Students are required to take a parking permit course prior to receiving a parking permit. This course is designed to educate potential permit holders on the alternatives to and impact of driving alone.

UVM has enabled technology to assist their diligent efforts in monitoring and enforcing the parking plan on campus. UVM has implemented a virtual parking permit system that utilizes license plate

reader technology. LPR equipped service vehicles monitor all the parking areas on campus routinely, identifying the vehicles parked on campus and whether they are parked appropriately given the permit type. As of July 2023, UVM implemented a new violation and fine structure that increased some of the fines.

In 2023, over 7,500 citations were issued, similarly to 2022. The most common violations of parking with no valid permit (1,563), in a restricted area (1,428), or parking in an expired space (1,234). Fines for expired metered spaces are $25, for parking in restricted areas are $50, and for parking with no valid permit are $50. Habitual offender fines go up significantly, with habitual offenders in expired spaces fined $85, in restricted areas fined $110, and without a valid permit $110. These fines act as a significant deterrent to improper parking on campus. In addition to the daily monitoring, quarterly counts are conducted for a three-day period at every lot during peak times (i.e. intervals starting at 10AM, 12PM, and 2PM).

In the Fall of 2023, UVM issued a total of 7,904 permits. Of those permits, 3,789 were employee permits, 105 were employee carpool permits, and 4,010 were issued to students. In Fall of 2022, there were 6,065 permits issued.

Transit
Green Mountain Transit has been fare free since March 2020 and returns May 2024. As a result, there is no data for FY22 or FY23 on ridership. As mentioned, UVM has provided Green Mountain Transit with annual funding while fares were free to help support transit.

On-Campus Shuttles
UVM provides an on-campus shuttle (CATS) for students that runs 7:30 am until 10:30 pm. On the weekdays, these shuttles generally run every 20 minutes between Redstone and Central campus, every 17 minutes on the on-campus route during the daytime and during the evening. Weekend service of the on-campus shuttle runs every 35 minutes in the evenings. Locations of the CATS shuttles can be tracked with the Real-Time CATS Shuttle Locations providing up to date information to users via website or mobile app

UVM also offers CATSride as a shuttle service on a first come, first serve basis. The intent of this shuttle service is to provide transportation between UVM sites within 10 miles of central campus. UVM employees and students can reserve a ride with the demand response-based service by scheduling in advance or can reach out directly to the shuttle for same day service. With the addition of Catamount East, brand-new student housing opening August 2024, UVM will be operating a shuttle from 7am-6pm the new building to the Davis Center on a 15-minute loop.

Table 5.7 CATS Shuttle Schedule

Routes	Days	Times	Runs Every (Minutes)	Buses Running
Redstone Express	Mon - Fri	7:40am - 4:40pm	20	1
Daytime	Mon - Fri	7:30am - 6:30pm	17	2[1]
Evening	Mon - Thurs	6:15pm - 10:00pm	17	2
Weekend	Sat - Sun	4:30pm - 10:00pm	35	1
Off Campus	Mon-Sun	Until 11:00pm	See GMT Website for Schedule	

1 Due to Staffing constraints, operated 2 buses Fall 2023, began operating 3 buses with start of Spring semester January 2024

Bicycle Infrastructure, Parking and Bikeshare
UVM is the only university in Vermont recognized as a Gold-level Bicycle Friendly University as of November 2021 and is one of only 31 universities nationwide to carry this designation. UVM has bike racks located throughout campus, indoor bicycle parking and pumps in most residence halls, and three fix-it stations. UVM Bikes, a student club, operates a bike co-op on campus overseen by Transportation & Parking Service advisors. The co-op leases bikes and offers bike mechanic services to UVM students and employees. UVM affiliates are eligible for a 20% discount on Bird Bikeshare rides through its affiliation with CATMA.

Planning Studies
The University of Vermont has a dedicated commitment to sustainably and creatively planning transportation for the campus. UVM has undergone multiple planning studies which all have a goal of reducing the number of SOVs on campus. Studies include the UVM Active Transportation Plan (2017), the 2023-2040 Comprehensive Sustainability Plan, and the 2022-2032 Campus Plan.

Climate Plan

In 2021, the University of Vermont published their Facilities Sustainability Plan (FSP), which aims to enhance convenient, accessible, affordable, low-carbon transportation options, reduce single occupancy vehicles; increase use of alternatives and shared modes, and ensure that fleet vehicles are rightsized, shared, and alternatively fueled. UVM released a 2023-2040 Comprehensive Sustainability Plan, integrating the goals identified in the FSP and including academics, research, and planning for the University. UVM is also undertaking the largest electric vehicle charging investment from an employer in the State of Vermont, which includes plans for 57 new fleet electric vehicle charging ports and 69 new public charging ports.

6. University of Vermont Medical Center

The University of Vermont Medical Center (UVMMC) is designated as a Level I Trauma Center situated in an academic teaching and research hospital serving the Vermont and Northern New York region. The campus in Burlington is the hub of a large, integrated healthcare system in partnership with an extensive network of hospitals and healthcare facilities throughout the region. Partnership with the Larner College of Medicine and College of Nursing and Health Sciences at UVM enables training for the next generation of healthcare professionals and innovation through advancing research.

The UVMMC campus sits prominently on the hill in Burlington adjacent to the UVM core campus area. Founded in 1879, the original hospital was partially housed in the Mary Fletcher Hospital building that still sits on the site today. The hospital's campus has expanded significantly over the years, adding buildings and square footage to support the hospital's mission and growing role in serving the communities of Vermont and Northern New York.

Current Conditions

Users (Employees, & Patients)

UVM Medical Center employs a total of 6,587 individuals who are assigned to the Medical Center Campus, 1 South Prospect Street, or another Burlington site. On any given day, 101 Honorary Members and 175 Volunteers are on campus who utilize visitor spaces if needed.

The UVMMC is a hospital with 580 licensed in-patient beds. In 2023, the average daily number of in-person appointments and procedures was 2,129 per day across the Medical Center Campus, 1 South Prospect, and other Burlington sites. In addition, there are 210 average daily telehealth visits. That accounts for over 540,000 in person appointments or procedures across the year and over 594,000 total visits. In 2022, UVMMC saw an average of 2,952 daily appointments and procedures (both in-person and telehealth) across Main Campus, 1 South Prospect, and other Burlington sites.

Telehealth

Telehealth continues to serve the patient population of the UVM Medical Center. With a significant rise in telehealth visits during the COVID pandemic, data from 2022 indicates that this practice will continue to serve some baseline portion of visits that would otherwise be in person. For 2023, approximately 9% of appointments were served via telehealth, amounting to over 53,000 additional patient appointments over the year served without a need for patient transportation to or parking on campus. In 2022, 10% of appointments were served via telehealth.

GSF Requirements and Parking Supply

The main medical center campus has 786,057 gsf serving the hospital's in-patient units, 35,597 gsf serving educational purposes, and an additional 877,085 gsf serving other purposes. Satellite sites within Burlington account for an additional 186,165 gsf of building space, with 1 South Prospect making up the majority of that area with 149,404 gsf. The hospital's infrastructure is served by 3,877 parking spaces, with 2,500 of the spaces in on-site facilities including the ACC Garage, Emergency Room Lot, McClure Garage, South Lot, and 1 South Prospect. Off-site lots include 1,237 additional spaces with 140 spaces available at other off-site Burlington satellite facilities and the remaining at lots served by shuttle services.

Table 6.1 Current GSF, and parking supply available at UVM Medical Center (Medical Center Campus and 1 South Prospect).

	Medical Center Campus	1 South Prospect	Total
Total GSF	1,698,739	149,404	1,848,143
Hospital (In-Patient)	786,057	-	-
Education and Other	912,682	-	-
In-Patient Beds	580	-	580
Current Parking Supply			
On-Site[1]	2,043	457	2,500
Leased/Offsite Parking Supply	-	-	1,237

[1]Only on-site parking is counted towards the parking supply.

Demand and Future Conditions

For demand calculations and future conditions please see the 2023-2028 JIPMP.

Lot Counts and Parking Utilization

As previously discussed, the peak parking demand was estimated using two methodologies: utilization counts and survey data. The parking supply for UVMMC is currently at 2,500 on-site spaces. The maximum parking utilization was compared across the available data from previous peak period observations to demonstrate changes over time. The parking utilization trends in Figure 5.2 demonstrate slightly reduced demand through the Fall 2020 to Fall 2023 period. Utilization has not returned above 90% peak utilization as observed prior to the COVID pandemic. The maximum peak utilization is most recently hovering in the low to mid-80% range.

Table 6.2 UVMMC Peak Parking Utilization Fall 2019 through Fall 2023
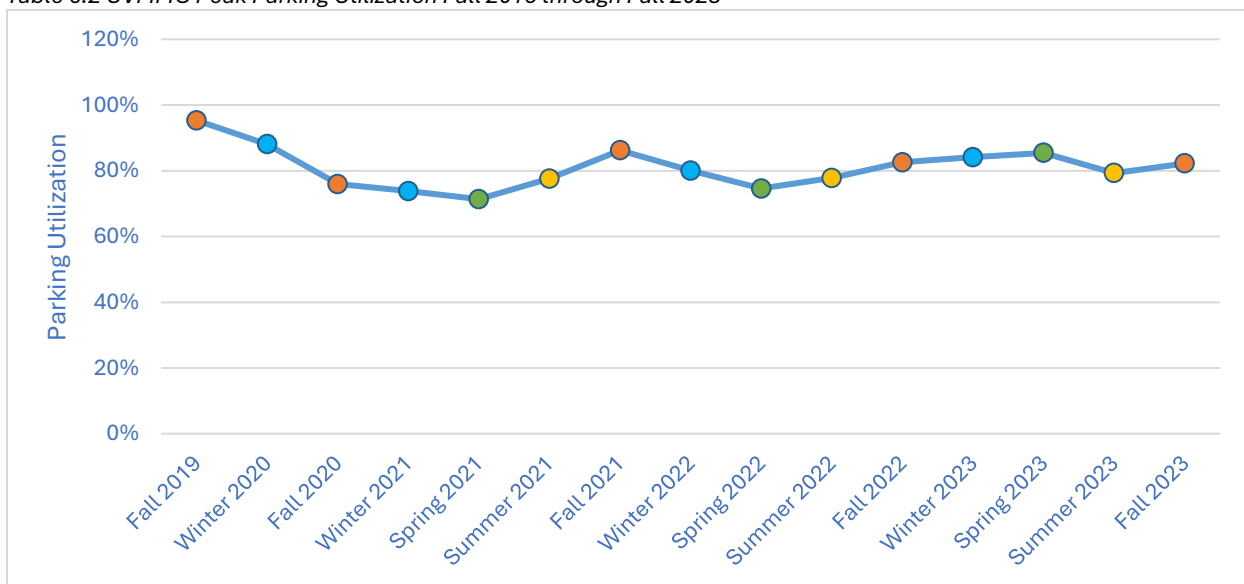
Unique Commute Trends & TDM Strategies

Commute Trends

- o Driving alone continues to be the primary mode for the majority of UVM Medical Center employees at both the Medical Center Campus and 1 South Prospect (Table 6.3).
    - o The drive alone rate increased by 3% compared to 2022 but is still lower compared to the pre-COVID rate (66% in 2019).
- o Carpooling is not a highly utilized mode, but over 10% of employees at both locations carpool as one of the modes they use to get to work.
- o This mode split represents all times, not just peak time. Please refer to table 10.3 for UVMMC's Peak Parking Demand.

Table 6.3 Mode Split (2023) for UVM Medical Center Employees by Campus.[1]
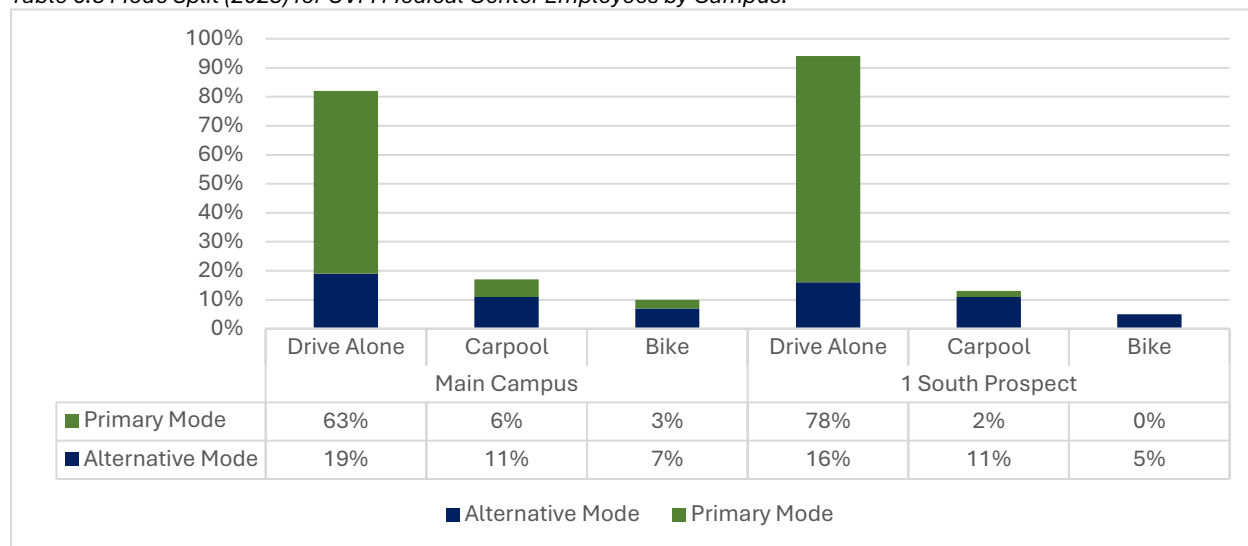
	Drive Alone	Carpool	Bike	Drive Alone	Carpool	Bike
	Main Campus			1 South Prospect		
Primary Mode	63%	6%	3%	78%	2%	0%
Alternative Mode	19%	11%	7%	16%	11%	5%

[1]*Alternative modes are methods to commute to work that may be utilized once every so often but are not the primary commute mode.*

Table 6.4 Collective mode split (2023) for UVM Medical Center employees.

UVMMC 2023 Primary Mode

- Drive Alone — 64%
- Carpool — 5%
- Walk — 5%
- Bike — 2%
- Bus/Shuttle — 12%
- Telework — 2%
- Other — 10%
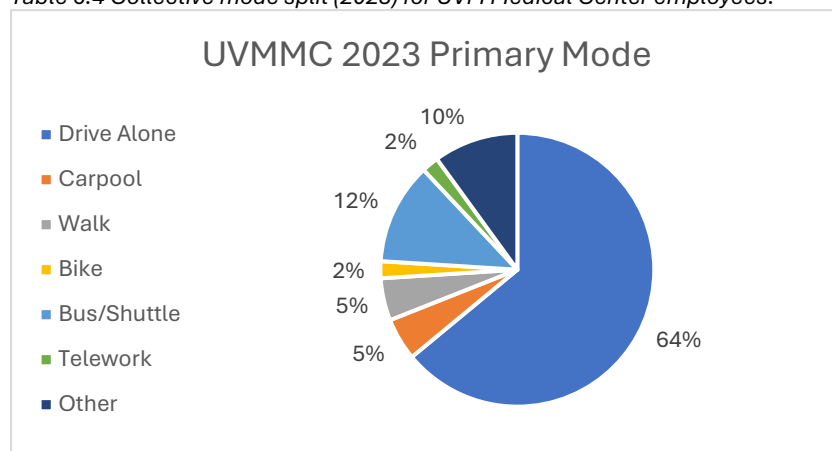
TDM and Congestion Management Strategies

Parking Restrictions & Permits
There are clear directions and information regarding parking locations and prices for UVMMC patients and visitors on the UVMMC website. For patients and visitors, on-site parking is available in a garage adjacent to the main campus with entrances to the hospital at each garage level. There is also curbside service including assistance to patients and valet parking service. Valet service is available for $8 per vehicle Monday through Friday from 6 AM to 5 PM, with the ability to retrieve vehicles until 9 PM. Patients or visitors with valid handicapped parking placard or plate displayed can park for free in the parking garage. For employees, UVMMC has a detailed parking policy that outlines parking requirements based on job title and shift. All UVMMC staff and affiliates who wish to park their vehicles in a UVMMC controlled parking lot must register their vehicle with the UVMMC Security Department. The hang tags are color coded based on parking assignment (on-site lot or satellite lot). The satellite lots include a free shuttle to the main campus. Generally on-site parking is limited to permits reserved for senior staff, physicians, residents, business needs, and medical needs. For on-call employees, parking is also available on site. In 2023, there were 4,548 permits issued for parking on-site of the 8,937 permits issued total. In 2022, 3,290 were issued for parking on-site of the 8,138 total permits.

Telework & Telehealth
UVMMC has a Remote and Hybrid Work Policy to increase employee engagement and job satisfaction. By allowing remote work, UVM Medical Center expects to realize the efficiencies of decreased turnover, reduced office and parking space needs, and increased work productivity. There are several remote designations, On-site Flex (0-30%), Hybrid Flex (31-70%), Remote Flex (71-100%). The amount of time spent remote is indicated by the numerical values. Telehealth continues to serve some of the patient and visitor demand for parking on the Medical Center Campus. As previously discussed, telehealth visits represented approximately 9% of patient appointments and procedures for UVMMC based on 2023 figures.

Shuttles & Transit Services
For employees accessing the Medical Center Campus through off-site parking, UVMMC contracts with a bus company to serve the off-site lots with shuttle service. The shuttles serve AM and PM peaks with more frequency of service and more shuttle buses in circulation to serve start and end of shift transit. The off-site lots generally have between 59 and 76 shuttle runs per day serving trips between the hours of 4:15 AM and 9:20 PM. The exception to this is the shuttle serving Centennial and 1 South Prospect, which typically operates with 30 shuttle runs per day serving the AM and PM peaks and on demand service midday. These two lots are in close proximity of the Medical Center Campus, with many users choosing to walk between parking and campus.

UVMMC has supported discounted local and regional bus transit service for employees in the past. With fare free transit in place, this subsidy has not been tracked through the pandemic. This discounted transit opportunity returns as transit fares have been reinstated in May 2024. UVMMC has continued to support subsidized ferry service for employees that reside in New York to utilize Lake Champlain Ferries for commuting purposes. In 2023, a total of 96 monthly car and driver passes and 137 passenger ten ride passes were discounted through this program.

Table 6.5 UVMMC Shuttle Schedule

Shuttle Locations	AM Runs	Midday Runs	PM Runs	Total
Tech Park/Medical Center	20	11	28	59
Lakeside/Medical Center	20	11	28	59
Fanny Allen/Medical Center	19	22	29	70
Catamount/Medical Center	25	15	36	76
Centennial/1 South Prospect	15	On Demand	15	30

Bike Infrastructure, Parking and Bikeshare

Bike parking, in particular covered bike parking, is also an area receiving some attention from UVMMC. Re-envisioning of the covered bike parking just outside of the McClure building, which is often full, to maximize the space available and accommodate more bike parking in close proximity to a key entrance of the facility. UVMMC is exploring making this area secure bike parking with fencing for employee bike parking. This project is just one example of the multimodal enhancements taking place to better serve active or alternative modes of transportation to and from UVMMC. UVMMC employees are eligible for a 20% discount on Bird Bikeshare rides through its affiliation with CATMA.

Carpool Incentive

UVMMC has a robust and mature carpooling policy for employees with a strong incentive program. Employees who carpool are provided with the opportunity to park in more desirable parking lots, receive gas coupons, and utilize the guaranteed ride home program from CATMA. Employees who wish to carpool must register as a carpool group with the UVMMC Security Department. The carpool program issued 520 carpool permits for 879 participants in 2023 demonstrating the program's popularity. In 2022, there were 427 carpool permits issued.

Climate Plan

UVMMC is committed to reducing its carbon footprint and mitigating health issues caused by climate change. UVMMC has received recognition from local and national organizations for limiting onsite parking, encouraging carpooling, and providing incentives for use of public transit. Additionally, UVMMC has partnerships with CATMA, Burlington 2030, and Vermont Climate Pledge Coalition.

7. Conclusion

This JIPMP Annual Update demonstrates the ability of the Hill institutions collectively and individually to meet parking demand and track trends with the 5-year projected peak parking demand in conjunction with the efficacy of TDM strategies employed to mitigate parking demand. Champlain College, UVM and UVM Medical Center are jointly committed to continued progress on reducing drive alone and single occupant vehicles to their campuses as rooted in overarching climate goals and initiatives and as outlined in the approved 2023-2028 JIPMP.

Once the City of Burlington Transportation Options Study is complete, it is anticipated the next JIPMP annual update and its content may be revamped with more focus on TDM.

8. Appendix A: Data Collection Methodology

Lot Counts

The institutions continue conducting quarterly lot counts for three days (Tuesday, Wednesday, and Thursday) and three times (10:00 AM, 12:00 PM, 2:00 PM) to support the 5-year and annual JIPMPs.

There are advantages and drawbacks to using lot counts or survey data to estimate demand. Though lot counts are an inexpensive method to calculate parking demand, they are also usually only representative of a limited time frame. This limitation means typical peak demand may not be captured due to variability (i.e. seasonal mode change, time-off, etc.), and may underestimate demand. Survey data may overestimate demand because it fails to capture daily variation seen in lot counts. However, survey data can break down demand by user group, understand different mode trends, and can forecast future demand patterns. For more information about the advantages and drawbacks of lot counts and survey data for estimating demand, please see the 2020-2022 JIPMP Appendix B which was provided by Jonathan Dowds formerly with UVM's Transportation Research Center.

Survey Administration

The 2023 CATMA Student and Employee Transportation Surveys were launched on October 4, 2023. Direct solicitation emails were sent to employees and students. In the case of UVM, direct solicitation emails were sent to a random sample of 2,000 employees and 2,000 students. Table A.8.1 describes the survey solicitation process.

Table A.8.1. Overview of CATMA's 2023 Transportation Survey solicitation and responses.

	Launch Date	Population Total	Solicitation Total	Total Responses	Response Rate
Student Survey					
Champlain	10/4/2023	1,786	1,734	405	23%
UVM	10/4/2023	14,320	2,000	307	15%
Employee Survey					
Champlain	10/4/2023	588	886	163	18%
UVM	10/4/2023	4,406	2,000	579	29%
UVM Medical Center	10/4/2023	9,266	9,266	2,251	24%

Survey Weighting

With guidance from UVM's Transportation Research Center, the results of CATMA's 2023 surveys were weighted using variables that impact peak parking demand, consistent with previous JIPMPs. Survey weighting is intended to weight survey responses in a way that is reflective of the actual population. This process corrects for segments in population who are either under or overrepresented by those who answered the survey. Please note that the data in this report may vary from data reported directly by these institutions due to different approaches to the weighting process.

Margin of Error

The margin of error is the range within which a true value may be found given a certain confidence interval. All margins of error reported in the 2024 JIPMP are within a 95% confidence interval. The margins of error were calculated using the Complex Samples modules in SPSS and were found for the peak parking demand percent for each user group. For each of the institutions, the composite margin of error was found by summing the squares of each user group's margin of error and taking the square of root of the sum. Knowing the margin of error is useful, because within a 95% confidence interval, we can know the total parking demand for any institution is above or below a certain percentage of the estimated demand given.

Peak Parking Demand

Peak parking demand percent is calculated by finding the time the most auto users are on each campus. For employees and off-campus students, auto users are either those who drive alone and half of those carpool as their main mode. For on-campus students, auto users are all individuals who own a car.

Table A.8.2. Summary of peak parking demand on each campus as identified by the 2023 CATMA Employee and Student Transportation Surveys.

Champlain College	Thursday	2:00 - 3:59 PM
UVM	Thursday	12:00 - 1:59 PM
UVM Medical Center	Monday	2:00 - 3:59 PM

9. Appendix B: CarShare Vermont Parking Demand Impacts

CarShare Vermont is a nonprofit organization that operates a carsharing service and delivers a range of programs aimed at reducing dependence on personal vehicles. It provides a neighborhood fleet of vehicles that can be used as needed, allowing its members to meet their mobility needs without the cost and responsibility of vehicle ownership. In addition to saving its members money, CarShare Vermont facilitates a dramatic reduction in vehicle ownership and therefore, reduces vehicle miles traveled and greenhouse gas emissions.

The impacts of carsharing on vehicle ownership, VMT, and GHG emissions have been consistently well documented by several independent academic researchers. Few studies, however, have focused explicitly on the impact of carsharing on parking demand except for a 2013 study of Ithaca CarShare[2] (Ithaca, NY) that attempted to understand how carsharing affected parking demand on campus at Cornell University and Ithaca College and in the community. The study concluded that Ithaca CarShare's carsharing program positively affected parking demand at the same ratio that it removed vehicles from the road, meaning that each Ithaca CarShare vehicle reduced parking demand by approximately 15 spaces. CarShare Vermont's program is very similar to Ithaca CarShare in scale, operation, service area, and impacts. Moreover, the rate at which vehicles are removed from the road is consistent.

In attempting to define the impact of its service on parking demand on and near the campuses, CarShare Vermont proposes a similar approach to Ithaca CarShare where demand is offset by about 15 spaces per CarShare Vermont vehicle based on the assumption that carsharing reduces the net number of vehicles needed to be parked, and these parking savings are primarily achieved near where members live or work (in the case of faculty and staff). A question remains as to how (or if) to adjust this calculation based on other factors. CarShare Vermont will continue to work with CATMA to refine this calculation but in the meantime, it maintains that its program effectively reduces demand for parking by up to 315 spaces citywide.

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[2] Stasko, Timon. Buck, Andrew. Gao, H. Oliver. November 2013. "Carsharing in a university setting: Impacts on vehicle ownership, parking demand, and mobility in Ithaca, NY." Carsharing in a university setting: Impacts on vehicle ownership, parking demand, and mobility in Ithaca, NY - ScienceDirect

10. Appendix C: Current Parking Demand Based on 2023 Survey Data

Table 10.1 Champlain College Current Peak Parking Demand

Champlain College			
User Group	**Number of Potential Users**	**Peak Parking Demand[1]**	
		% of Users	**Spaces**
Employees	588	42%	247
Off-Campus Students	372	21%	80
On-Campus Students	1414	42%	594
Visitors			15
Fleet[2]			6
Peak Parking Demand			
Demand Based on Survey[3]			**942**
Utilization Based on Counts			**440**
Parking Supply			
Total Spaces[4]			**642**
Net Spaces Peak Utilization			
Peak Demand			**-300**
Peak Utilization			**202**

1. Peak parking demand is calculated from data collected in the 2023 CATMA Survey where "% of Users" consists only of car users who are on campus at peak time.
2. Champlain has 15 fleet vehicles but estimates only ~40% attempt to park on campus at peak time.
3. Total peak parking demand has a margin of error of ±124 spaces, or 13%, a slight increase from 12%
4. Total Parking Supply does not include 145 on-street parking spaces in Designated Zones

Table 10.2 University of Vermont Current Peak Parking Demand

UVM			
User Group	**Number of Potential Users**	**Peak Parking Demand[1]**	
		% of Users	**Spaces**
Employees[2]	4,406	56%	2,468
Off-Campus Students[3]	8,300	20%	1,660
On-Campus Students	5,476	25%	1,369
Visitors			185
Fleet[4]			197
Peak Parking Demand			
Demand Based on Survey[5]			**5,879**
Utilization Based on Counts			**3,238**
Parking Supply			
Total Spaces			**4,956**
Net Spaces Peak Utilization			
Peak Demand			**-923**
Peak Utilization			**1,718**

1. Peak parking demand is calculated from data collected in the 2023 CATMA Employee and Student Transportation Survey using the methodology described in Appendix A. "% of Users" consists only of car users who are on campus at peak time.
2. Employees not located on Main Campus are not included in this count.
3. Off-Campus Students does not include Continuing Education students.
4. Fleet vehicles not located on Main Campus or in Burlington not included in this count.
5. Total peak parking demand has a margin of error of ±1,029 spaces, or 17% (a MOE decrease from 21%)

Table 10.3 UVM Medical Center Current Peak Parking Demand

User Group	Number of Users	Peak Parking Demand[1]	
		% of Users	Spaces
Medical Center Campus			
Employees	5,942	12.8%	761
Out-Patients[4]	1,838		**700**
In-Patients[4]			**75**
Visitors[2]			**250**
Fleet			**11**
Subtotal			*1,797*
1 South Prospect			
Employees[3]	628	3.0%	19
Out-Patients[4]	291		**230**
Fleet			**10**
Subtotal			*260*
Other			
Employees	17	8.2%	1
Subtotal			*1*
Peak Parking Demand			
Demand Based on Survey			**2,056**
Utilization Based on Counts			**2,008**
Parking Supply			
Total Spaces			**2,500**
Net Spaces Peak Utilization			
Peak Demand			**444**
Peak Utilization			**492**

1. Peak parking demand is calculated from data collected in the 2023 CATMA Employee and Student Transportation Survey using the methodology described in Appendix A. "% of Users" consists only of car users who are on campus at peak time.
2. Average daily patient estimates are based on total annual in person and telehealth appointments and procedures by location for 2023 at the Medical Center and 1 South Prospect facilities. Patient and visitor parking is allocated to 50% of the parking supply on-site. Policies are in place should the patient parking demand exceed this supply.
3. Employees of 1 South Prospect assigned to Centennial have been allowed to park on-site due to suspended shuttle service.
4. Patient parking is allocated to 50% of the parking supply on-site. Policies are in place should the patient parking demand exceed this supply.