

CAPITAL DISTRICT TRANSPORTATION AUTHORITY CLEAN MOBILITY PLAN

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Abbreviations

BRT – Bus Rapid Transit
CO₂- Carbon Dioxide
CDTA – Capital District Transportation Authority
CLCPA – Climate Leadership and Community Protection Act
CDPHP- Capital District Physicians’ Health Plan, Inc.
CRTC – Capital Region Transportation Council
DAC – Disadvantaged Communities
EPA – Environmental Protection Agency
EV – Electric Vehicle
HVCC – Hudson Valley Community College
IoT – Internet of Things
kWh- kilowatt-hour
MDO – Mobility Development Operations
MPO – Metropolitan Planning Organization
NEC – National Electrical Code
NYSERDA – New York State Energy Research and Development Authority
ROW – Right of Way
SMI – Shared Mobility Inc.
SUNY- State University of New York
UL – Underwriters Laboratories

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Executive Summary

The Capital District Transportation Authority (CDTA), in partnership with Shared Mobility Inc. (SMI), has undertaken this clean mobility planning initiative to address critical transportation access gaps across the Capital Region, particularly in disadvantaged communities (DACs). Many residents of the region lack reliable access to affordable transportation and across this analysis' core cities of Albany, Rensselaer and Troy, 67.4% of households own 1 vehicle or less. Supported by NYSEDA's Clean Mobility Program (PON 5739), this plan seeks to build upon CDTA's proven expertise in deploying mobility hubs and shared mobility programs that strengthen first and last mile connectivity, reduce greenhouse gas emissions, and promote equitable access to multimodal, zero-emission transportation solutions. These goals align with climate action plans put forth by CDTA and New York State.

CDTA already has five existing mobility hubs, each providing enhanced customer amenities that have improved DAC access to its existing bikeshare and carshare programs. This plan will help CDTA continue to innovate and evolve its mobility hub initiatives by laying a blueprint for its next generation of mobility hubs. These hubs will leverage multiple mobility options, including carshare, electric micromobility charging, and wayfinding methods to improve first-mile last-mile access to CDTA services.

This plan will develop the model by creating a detailed plan for a single site, the Joseph L. Bruno Amtrak Rail Station, to showcase the potential integrations of electrified mobility hubs. The site was chosen for its jurisdictional simplicity (CDTA owns the site), its central location within the CDTA service area, its proximity to DACs, and the potential to convert modal shift from personal vehicle and rideshare trips to zero-emission solutions for the nearly 900,000 people who come to and from the station annually.

CDTA has long been committed to innovating new electric shared mobility programs while also cementing sustainability into existing programs. This plan also explores how mobility hubs and deployment of electric charging infrastructure extending into Albany can further bolster the ongoing sustainability of CDTA's existing shared mobility programs: CDPHP Cycle! bikeshare program and DRIVE, its all EV low-rate carshare program. CDTA has already demonstrated the success of these programs in the Capital Region, proving the viability of these zero-emission mobility services. By bringing them together at the Joseph L. Bruno Rail Station and expanding access to electric charging infrastructure, this initiative will demonstrate their electrified integration within a mobility hub. The Joseph L. Bruno Rail Station electric mobility hub will serve as a blueprint for replication of similar hubs throughout the CDTA service area, including a network of electric charging infrastructure for bikeshare.



Introduction

Vision and Mission Statement

The mobility plan evaluates opportunities for improving Capital District Transportation Authority (CDTA)'s shared mobility programs to better serve disadvantaged communities (DACs). The plan primarily looks at what mobility solution additions and/or expansions and further integrations could help to reduce dependence on personal vehicles, close first/last mile gaps, and advance community driven, sustainable transportation solutions that can serve as replicable models for the agency moving forward. The analysis and recommendations of this report will help guide CDTA in building out more access to zero emission transportation programs that benefit DACs.

Background Information

About CDTA

The Capital District Transportation Authority (CDTA) was established in 1970 by the New York State Legislature as a public benefit corporation to deliver regional mobility services in New York State's Capital Region. Today, CDTA is a regional public transportation provider, serving Albany, Montgomery, Rensselaer, Saratoga, Schenectady, and Warren counties. Its services include fixed-route bus service, BusPlus bus rapid transit (BRT), paratransit (STAR), FLEX On-Demand service, shuttle systems, commuter coach lines such as the Northway Xpress (NX), and seasonal trolleys. Additionally, CDTA has been New York State's leading transit agency in its development of electric shared mobility programs that extend the reach of public transit, particularly for underserved populations. In 2017, CDTA launched CDPHP Cycle!, a regional bikeshare service that now includes e-bikes and pedal bikes. In 2023 CDTA relaunched DRIVE, an EV carshare program that provides affordable hourly rates for customers in a growing number of communities in the region. CDTA subsidiaries also own and operate the Joseph L. Bruno Rail Station in Rensselaer which is the busiest rail station in the region. The authority's service footprint spans 3,586 square miles.

In fiscal year 2024–2025, CDTA delivered a record 18.5 million riderships, averaging more than 55,000 weekday boardings. The authority operates 63 bus routes, nearly 3,600 square miles of service area, and maintains 2,640 bus stops and 29 park-and-ride lots. Of the region's population, more than 500,000 people about 50 percent live within a quarter-mile of bus service. In recent years, CDTA has emerged as a statewide leader in implementing integrated mobility hubs in Upstate NY, launching the Capital Region's first mobility hub in Schenectady in late 2023, followed by a second in Troy in 2024. These hubs consolidate bikeshare, carshare, bus service, and pedestrian improvements into cohesive, accessible sites. Figure 1 represents existing CDTA mobility hubs. Mobility hub development aligns with CDTA's Climate Action Plan ¹, which outlines expansion of transit mobility offerings as a means to promote a wide-ranging network of options, thereby increasing transit use in CDTA's service area. This planning project builds on that momentum, by assessing how the agency's future shared mobility expansions and electric charging infrastructure can best meet the needs of DAC residents moving forward.

1. CDTA (2023, February), Climate Action Plan https://www.cdta-tdp.com/_files/ugd/34e0c8_e7a7d2f4170349eeb53fa844ba14687f.pdf

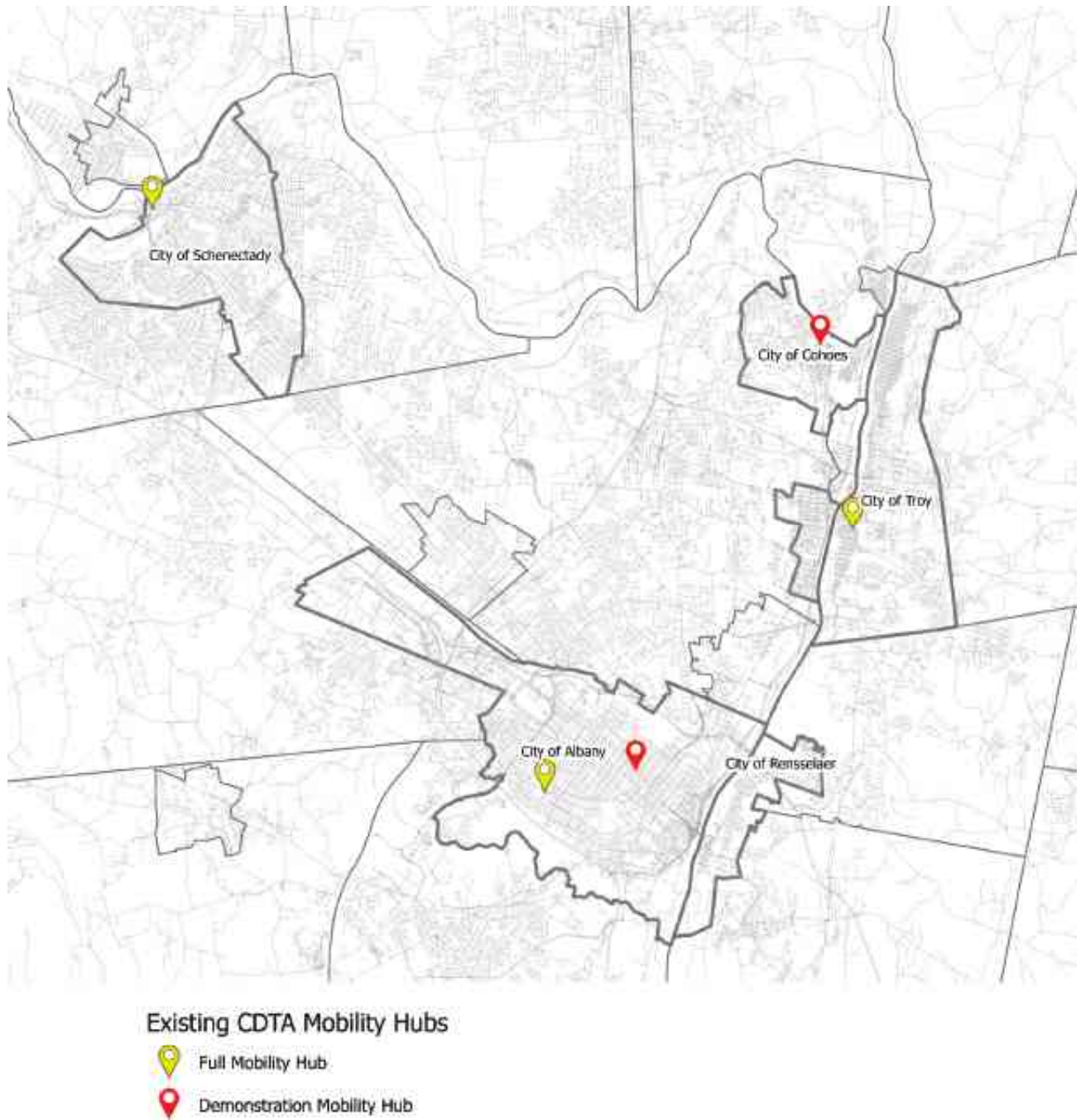


Figure 1: Existing CDTA Mobility Hubs



About CDPHP Cycle! and SCOOT

CDPHP Cycle! is the Capital Region's regional bikeshare program, now in its ninth season of operation. Owned by the Capital District Transportation Authority (CDTA) and powered by Drop Mobility's technology platform, CDPHP Cycle! has become a cornerstone of the region's active transportation network. Since its launch, customers have logged over 830,000 miles across a growing fleet that includes both pedal and electric-assist bikes, serving communities throughout CDTA's 6 counties with 400 electric bicycles and 200 pedal bikes. In addition to its bikeshare success, CDTA has been piloting a complementary shared scooter program known as SCOOT in partnership with DROP Mobility. Over the past two years, SCOOT has been tested in targeted markets to assess demand, safety, and operational feasibility for potential longterm deployment.

In 2024, SCOOT was piloted successfully through a series of micro-pilots in Albany, Troy, Schenectady, and Saratoga Springs. The four-weekend trial deployed 25 scooters using a structured lock-to model, resulting in 121 trips, more than 3,000 minutes of ridership, and overwhelmingly positive community feedback. Riders highlighted the scooters' reliability, eco-friendly appeal, and potential to serve as a last-mile connector. Building on these results, CDTA is advancing to a larger, month-long pilot program in Albany from September to October 2025. This pilot will provide deeper insights into ridership patterns, marketing strategies, and operational needs, helping to inform the feasibility of permanent scooter service across the Capital Region. See Appendix B for the detailed pilot report.

DRIVE Carshare

Owned by CDTA, DRIVE offers residents a clean, affordable mobility option that complements CDTA's broader public transit and micromobility network. By integrating zero emission vehicles into the region's transportation ecosystem, the service supports goals around sustainability, multimodal access, and reduced reliance on private car ownership.

What is a mobility hub?

A mobility hub is a strategically designed, multi-modal transport node where various forms of mobility services connect in a single accessible space. It simplifies transfers between different modes of transportation, reduces reliance on personal vehicles and improves first/last mile connectivity through integrated infrastructure. These hubs are typically located near transit stations, high foot fall urban locations and/or in underserved communities which are designed to support daily commute or occasional trips.

Academic literature reinforces the transformative potential of mobility hubs by highlighting evidence-based strategies that enhance their effectiveness and adoption. Studies show that strategically located hubs, especially near public transit and in high-density, mixed-use areas are most successful in promoting first/last mile connectivity. When designed with integrated charging infrastructure, real-time data tools, and user-friendly features, these hubs support increased ridership and lower emissions. Researchers also emphasize the importance of equitable deployment in underserved communities, clear regulatory frameworks, and stakeholder engagement to ensure accessibility and long-term success.²

A mobility hub may include:

- **Public transit access:** Connections to buses, light rail, metro depending on the local transit network, often mobility hubs are located where several lines intersect
- **Micromobility stations:** Docked bikeshare/scootershare systems for short distance travel, enabling users to complete first/last mile travel.
- **Electric micromobility charging infrastructure:** Charging infrastructure to support charging of micromobility on-site through safe and secure infrastructure. This may include charging for shared devices from a bikeshare/scootershare and/or charging for personally owned devices.
- **Park-and-ride facilities:** Parking areas where individuals can park their private vehicles and transfer to public transport,

2. Hosseini, K., Stefaniec, A., O'Mahony, M., & Caulfield, B. (2023). Optimising shared electric mobility hubs: Insights from performance analysis and factors influencing riding demand. *Transportation Research Part D: Transport and Environment*, 118, 103790. <https://www.sciencedirect.com/science/article/pii/S2213624X23001062>

encouraging individuals to use public transport and reduce congestion.

- **Carshare station:** Designated parking spots for cars that can be rented by the hour at low cost rates, providing a mode for people that do not own a vehicle
- **EV charging infrastructure:** Charging infrastructure to support EV carsharing and for charging personally owned electric vehicles. Publicly accessible EV Chargers can support residents, employees, and visitors especially those living in disadvantaged communities without access to home-based charging.
- **Ride-hailing pick-up/drop-off zones:** Clearly marked areas for pickup and drop off services for on demand transportation modes like Uber or Lyft, to reduce curbside congestion and improve safety.
- **Pedestrian friendly pathways:** Safe and well lit, accessible walking routes within and around the hub.
- **Digital info kiosks and wayfinding tools:** Real time transit updates, interactive maps, and signage to assist customers in planning trips.
- **Ticket machine / Fare kiosk:** Automated kiosks or smart card systems that allow customers to purchase or recharge transit passes.
- **Retail, restrooms, and waiting areas:** Sheltered waiting areas, public restrooms, retail kiosks and seating to enhance usability and encourage use of shared mobility options.

Community Engagement

Events and Participants

Community engagement was a central component of this analysis, helping surface key insights from residents, transit customers, and mobility stakeholders across the Capital Region. The engagement process included an online survey, in-person outreach at major transit locations, and stakeholder meetings with partners in the clean mobility ecosystem. These activities took place from April to June 2025.

Public Survey Highlights

The online survey collected 144 responses from a cross-section of CDTA's ridership base, which includes many transit dependent and DAC residents in and around Albany, NY. Over half of the respondents 51% reported they have no access or limited access to a personal motor vehicle. Furthermore, many respondents noted that they would like to see more access points to CDPHP Cycle!, DRIVE Carshare, and secure e-bike charging/storage at CDTA sites. While 52% use CDTA services at least a few times per week, those that did not cite limited coverage to their end destination and lack of awareness of CDTA-provided shared mobility services like bikeshare, carshare, and on-demand services.

On-Site Engagement

In-person conversations at the Joseph L. Bruno Rail Station and downtown Albany bus stops surfaced recurring concerns around first/last mile gaps, station navigation, and limited access to bikeshare. Many people we spoke to during this stage at the Rail Station did not know of a convenient CDTA service to help them reach their end destination/origin in Albany. Rensselaer DAC residents at the Rail Station site were excited to hear about greater access to CDTA shared mobility programs such as CDPHP Cycle! and DRIVE Carshare. Customers in and around downtown Albany spoke about how they were interested in bikeshare to reach their destinations in Albany but that it would be helpful to have more locations and bikes available.

Stakeholder Perspectives

Meetings with CDPHP Cycle!, DRIVE, Capital Streets, and the Capital Region Transportation Council (CRTC) reinforced the community findings while offering operational, planning and policy-level insight:

- **CDPHP Cycle!** highlighted how charging infrastructure for bikeshare could enhance operational efficiency and enhance the service's ability to reach underserved areas. Sites like the Joseph L. Bruno Rail Station and Morton Avenue were flagged for



future infrastructure. Staff explained that to effectively use charging infrastructure for bikeshare, just installing one electric charging hub in the city would not work, it would need to be at a larger scale and their e-bikes would need to be retrofitted across the entire fleet or subsections of the fleet serving individual service areas. They recommended CDPHP Cycle! focuses first on piloting electric infrastructure within the Albany service area and recommended a dozen Albany bikeshare hub locations for this pilot. The Albany fleet (150 e-bikes) would have to be retrofitted.

- **DRIVE** staff discussed the challenges to expanding the program posed by lack of EV infrastructure and the potential to grow carshare access at multimodal hubs. Staff also cited high demand for the service throughout the region and anticipate high demand for the service in and around the Joseph L. Bruno Rail Station. Based on high utilization rates of cars stationed in Albany, they are looking for additional hubs to help meet demand for carshare in the City of Albany.
- **Capital Streets** is a local community group that develops planning recommendations and advocates for safer roadways in the region. They emphasized secure bike parking, improved wayfinding between cities and nearby connecting services, and education around micromobility. They also pointed to infrastructure needs near state offices and social service hubs
- **CRTC** is the region's MPO. They expressed alignment between this project's mobility hub vision and the region's long-range transportation plan *In Motion: the Plan to 2050*. They confirmed that Joseph L. Bruno Rail Station would be a strategic location for demonstrating electric mobility charging and integrations between CDTA's various shared mobility services, underscoring the value of co-location and accessible design.

These findings helped shape project priorities and identified specific gaps and opportunities in mobility access, visibility, and infrastructure integration. Insights from both community members and stakeholders informed recommendations around site selection, service coordination, and amenity design. By centering the lived experiences of customers and leveraging the expertise of mobility partners, the engagement process provided a foundation for planning clean, equitable, and responsive mobility solutions. A full summary of community engagement findings is included in the appendix.

Past Plans and Community Engagement

These current findings build on a foundation laid by past city and regional planning efforts that have consistently prioritized multimodal access, safety, sustainability, and equity. Over the past two decades, public engagement for these plans, from neighborhood workshops and targeted outreach to interactive mapping tools and quick-build pilots, has reflected many of the same themes raised in our recent outreach.

At the city level, the Albany 2030 Comprehensive Plan³ envisioned a complete, sustainable, and multimodal transportation network that strengthens neighborhood connections and reduces environmental impact. The plan's public engagement included more than 30 meetings, targeted outreach to diverse communities, and activities such as mapping exercises and visual preference surveys. Participants voiced strong support for sustainable transportation options, including electric buses and EV charging infrastructure. This feedback informed strategies like VEI-4, which calls for integrating EV facilities into street and parking design, requiring EV infrastructure in new development approvals, and transitioning public fleets to hybrid, electric, and alternative fuels, a direction that aligns closely with this project's clean mobility goals.

Other past plans also inform the current effort. The City of Rensselaer Downtown Redevelopment Plan for (2003–2010)⁴ developed more than a decade ago, positioned the Joseph L. Bruno Rail Station area as the Capital District's premier intermodal hub, calling for improved pedestrian and bicycle connections, targeted redevelopment, active public spaces, and a mix of residential, commercial, and hospitality uses, an aspiration that continues to guide current mobility planning. Guided by this plan, a number of improvements have been made in and around the site, and more are in the works. The Albany Bike and Pedestrian Master Plan (2021)⁵ and earlier City of Albany Bicycle Master Plan (2009)⁶ underscored public demand for safer, continuous bike lanes, improved citywide connectivity, and greater awareness of active transportation benefits. These plans were shaped by extensive

3. Albany 2030 Comprehensive Plan, April 2012 <https://www.albanyny.gov/DocumentCenter/View/4564/Albany-2030-Comprehensive-Plan-PDF>

4. The City of Rensselaer Downtown Redevelopment Plan for (2003–2010), June 2003
https://www.rensselaerplanning.com/_files/ugd/44ef1c_3dd0a3c8cd994355bbc328e93f0c8b17.pdf

5. The Albany Bike and Pedestrian Master Plan, 2021
https://www.capitalmpo.org/wp-content/CRTC/images/planningcommittee/2021_Planning_Committee/April/Albany_BPMP_Executive_Summary_-_2021-04-07.pdf

6. Albany Bicycle Master Plan, December 2009 https://www.capitalmpo.org/wp-content/CRTC/images/linkage_program/AlbCoFinal/albanybikemp.pdf

surveys, community listening sessions, and pilot projects, and their priorities are reflected in today's push for secure bike parking, wayfinding, and integrated micromobility infrastructure.

Mobility focused needs assessment and gap analysis

CDTA operates several services across New York's Capital Region, with new pilots and programs in progress. While each service offers valuable options, there is an opportunity to strengthen how these programs connect and complement one another. This section reviews key services within the CDTA network, identifies persistent gaps, and highlights opportunities to better integrate them into electric mobility hubs, supporting a more connected, equitable, and sustainable transportation system.

SERVICE	EXISTING SCOPE ON CDTA	KEY GAPS	OPPORTUNITIES
Bikeshare	CDPHP Cycle! operates in participating communities across the region with e-bikes and standard bikes.	No bikeshare access in Rensselaer; opportunities to improve bike uptime (due to battery charge) and availability in Albany; operational inefficiencies due to lack of in-field charging capabilities	Expand bikeshare to underserved nodes with high demand for transit links like the Joseph L. Bruno Rail Station; improve visibility with signage and branding; pilot infrastructure for e-bike charging in Albany.
CDTA Bus	CDTA runs a robust network of fixed-route and BusPlus BRT, and FLEX On-Demand services; many lines serve DACs and transit-dependent areas	While CDTA's app provides real-time transit information however there are opportunities to expand on-site access by incorporating real-time displays at bus stops; No mid-route charging for electric buses	Incorporate real-time digital displays at high-use stops; align transit routes with mobility hub investments; explore mid-route charging for buses
EV Carshare	DRIVE offers shared EVs at select mobility hubs and parking lots; integrated with CDTA's broader clean mobility efforts.	Opportunities to grow awareness; future expansion depends on improving EV charging infrastructure across more potential carshare sites in Albany and CDTA Mobility Hub sites.	Expand carshare to Rail Station to co-locate with bikeshare and transit; expand carshare to Albany to better serve DACs there
Micromobility Charging	No current micromobility charging available for personal e-bikes, scooters in the CDTA system.	Lack of outdoor charging infrastructure; no secure storage for personal devices; growing concern over unsafe indoor charging in residences and workplaces.	Install secure, public micromobility charging at major hubs and transfer points; promote safety and access; integrate lockers and signage with other mobility services.
Scooter-share	CDTA is piloting the SCOOT electric scooter program with DROP Mobility, offering access to e-scooters at pop-up events in the region.	The program is limited in scope and duration, with no permanent deployment to date. Availability is restricted to specific times and zones	Continued piloting of scooter program in select higher trafficked areas to learn more about public interest in the program

Table 1: Mobility needs assessment and gap analysis



Site Identifications and Operations

Mobility options

Based on the feedback received through the community engagement processes outlined above, this plan is focussed on expanding CDTA's existing innovations in shared and electrified mobility to better serve its customers, particularly those from DACs. The mobility focused needs assessment and gap analysis and the results of community and stakeholder engagement were compared in an evaluation matrix, seen below, to determine the order of priority for mobility options in the CDTA service area.

Service	Interest based on community engagement and gap analysis (6, high to 1, low)	Ease of Adoption (6, high to 1, low)	Opportunity to extend Transit's reach in DAC's (6, high to 1, low)	Projected Financial Sustainability (6, high to 1, low)	Total Score
DRIVE CDTA E-Carshare expansion	5	4	6	3	18
Micromobility Charging (personal devices)	4	4	5	4	17
CDPHP Cycle Bikeshare improvements/expansion	5	3	5	6	19
Electric Microtransit	6	3	5	1 ⁷	15
Scooter Share	4	4	4	4	16
E-bike Ownership Incentive Program	4	4	6	1	15

Table 2: Evaluation matrix of mobility options and prioritization.

Based on the results of the mobility options evaluation matrix, the following is a list of the main mobility initiatives that should be prioritized moving forward for service expansion/improvements and further opportunities to integrate these programs at CDTA's next generation of mobility hubs:

- **Evaluation EV Carshare services**

Across the Capital Region, residents and customers continue to express the need for flexible, affordable vehicle access without the costs of ownership. This plan looks for opportunities to co-locate carshare at the Joseph L Bruno Rail Station and integrate the program with other CDTA services offered at that site.

- **Micromobility Charging Infrastructure**

Community feedback identified safety concerns and inconvenience due to the lack of designated secure outdoor storage and charging for personal e-bikes, scooters, and other micromobility devices. This plan includes assessing the feasibility of secure micromobility charging and storage infrastructure, especially at high-traffic transit stops and potential mobility hub locations.

- **Expansion of Bikeshare services**

CDPHP *Cycle!* serves a variety of communities throughout the region but in order to grow and improve operational efficiencies, the program needs to explore in field charging infrastructure for its e-bikes. The improved operational efficiencies that may come with in-field charging infrastructure can help the program expand, enhancing its ability to reach underserved communities throughout the region.

7. CDTA recently decided to discontinue its FLEX on-demand microtransit service due to lack of financial sustainability and low ridership numbers. Due to these factors, this plan recommends that CDTA does not focus on electric microtransit to address transportation needs identified through this planning process.

Mobility Hub Location Selection

Figure 2 displays 12 proposed new mobility hub locations across the Capital Region recommended by CDTA's previous planning processes. These 12 sites were narrowed down to 6 locations through CDTA stakeholder engagement prior to this planning process. They were identified by assessing the criteria listed below.

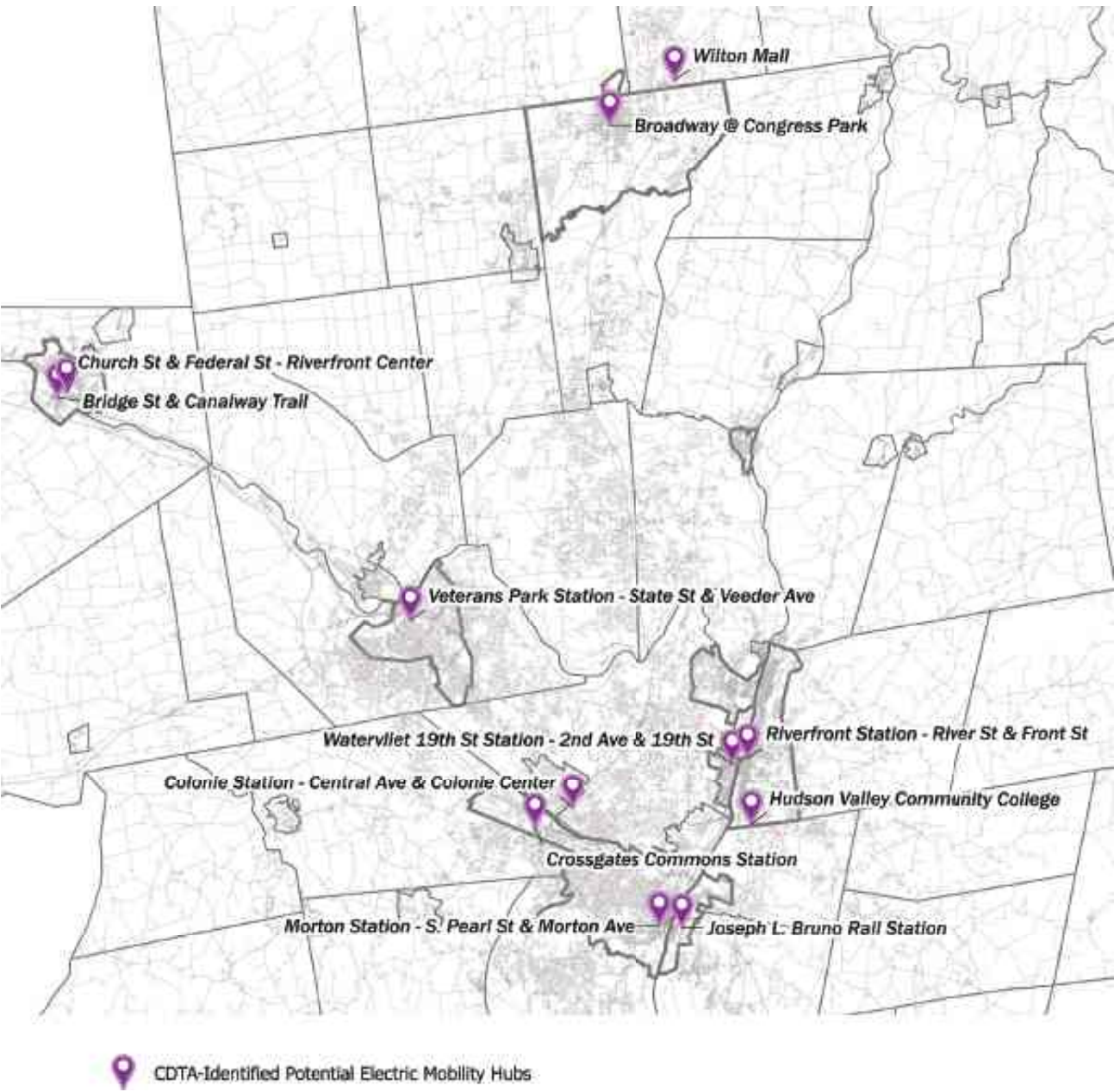


Figure 2: CDTA identified location for Mobility Hub

Critical Trait	- Space for amenities and jurisdiction/ownership of land - Nearby partners or key activity generator(s) - Transfer opportunities - Current ridership or expected future increases - Micromobility applications
Preferred Trait	Balanced distribution throughout the service area Benefits low-income customers

Table 3: Critical and preferred traits for selecting mobility hub locations



This planning study further refined these selections, by overlaying the six priority hubs with New York State-designated DAC boundaries. This spatial analysis identified four locations that met both key criteria: (1) being prioritized through stakeholder engagement, and (2) falling within a DAC (Figure 3⁸). These hub proposals include Morton Station in Albany, Joseph L. Bruno Rail Station in Rensselaer, and Riverfront Station and Hudson Valley Community College in Troy.

The planning team then conducted a multivariate analysis, combining both quantitative and qualitative factors, to establish an internal order of priority among the remaining four DAC-aligned sites.

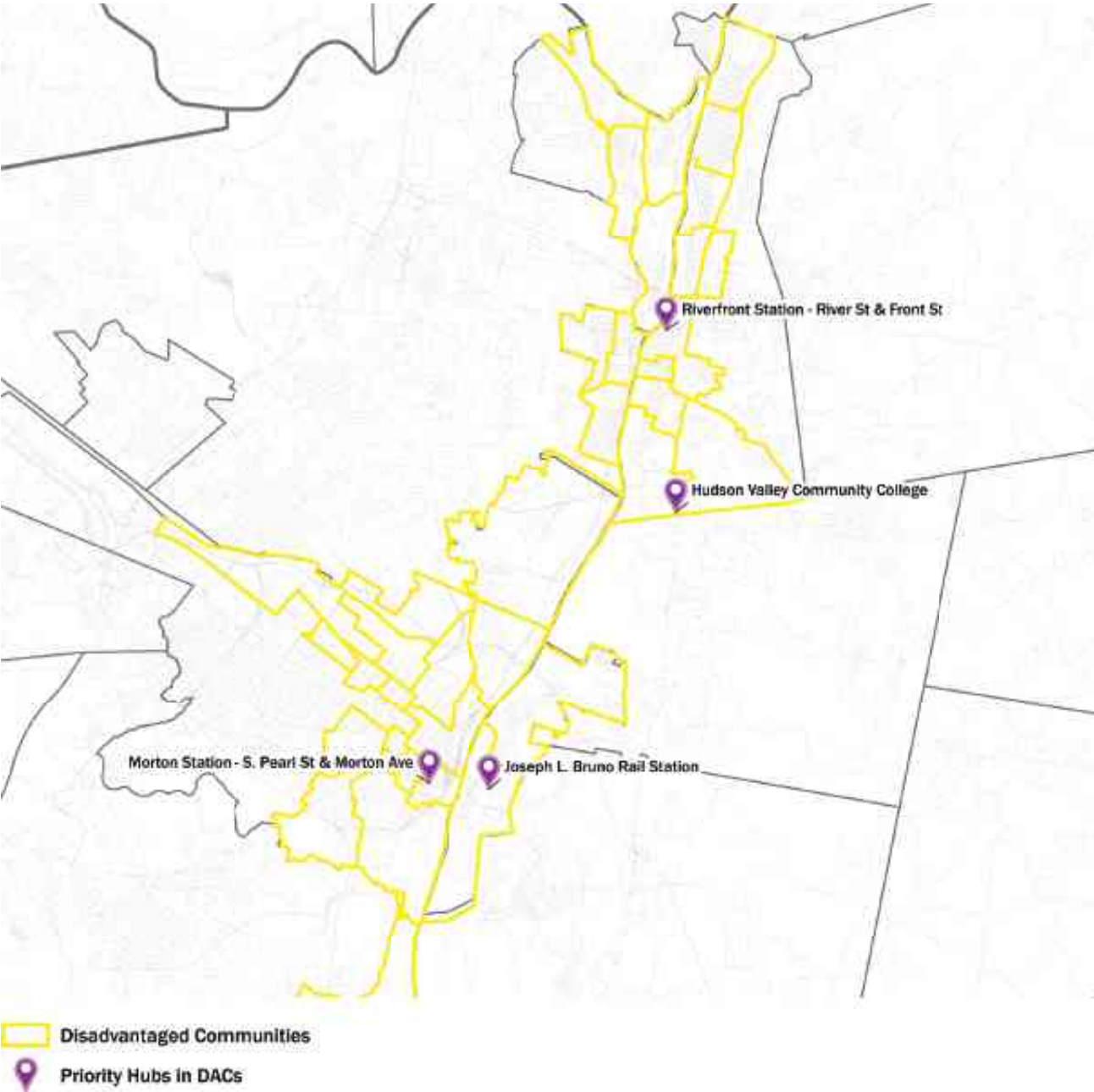


Figure 3: Proposed Mobility hub locations in DACs

8. Disadvantaged Communities, NYSERDA 2023

Additionally, Figure 4 highlights existing CDTA mobility hubs that are currently operational, either as permanent installations or as part of demonstration projects in relation to prioritized mobility hub proposals. These provide important context on existing geographic distribution in relation to the proposed hubs and serve as precedents for the development and implementation of future hubs in the region.

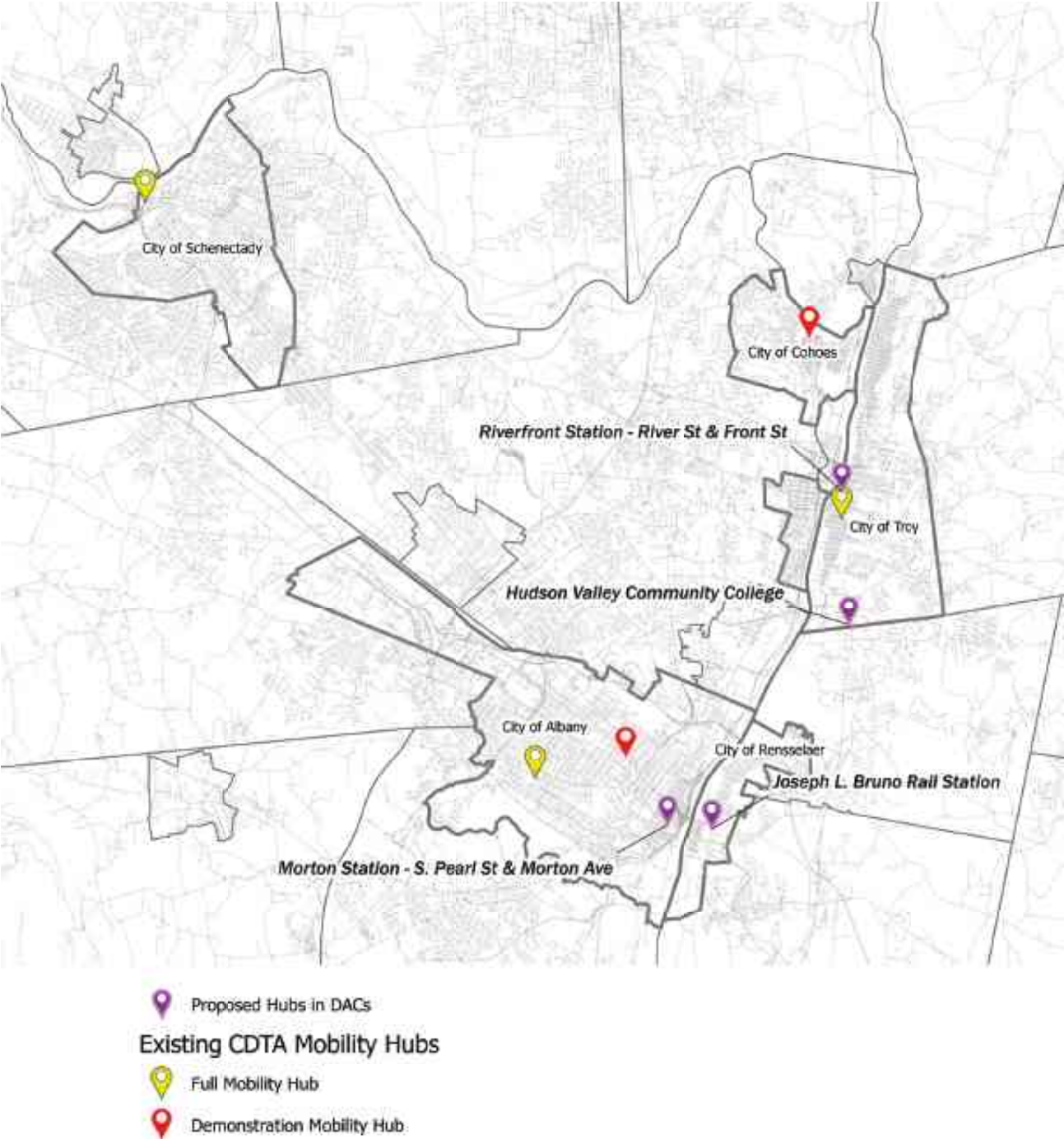


Figure 4: Existing and Proposed Mobility hub locations



Median Household Income

Figure 5⁹ shows the median household income for census tracts surrounding each priority proposed mobility hub. All four locations are within low- to moderate-income communities, defined as having median incomes below 80% of the area median income (\$64,776). Morton Station is the lowest at \$36,150, while the Joseph L. Bruno Rail Station is the highest at \$61,042. This suggests that all locations could benefit from affordable, accessible transportation options, with Morton Station representing the greatest economic disadvantage. This indicates a consistent opportunity across all proposed locations to serve households that may face financial barriers to transportation. Targeting these communities with affordable and accessible mobility options can help reduce transportation inequities, improve access to jobs and services, and support broader goals related to mobility justice and economic inclusion.

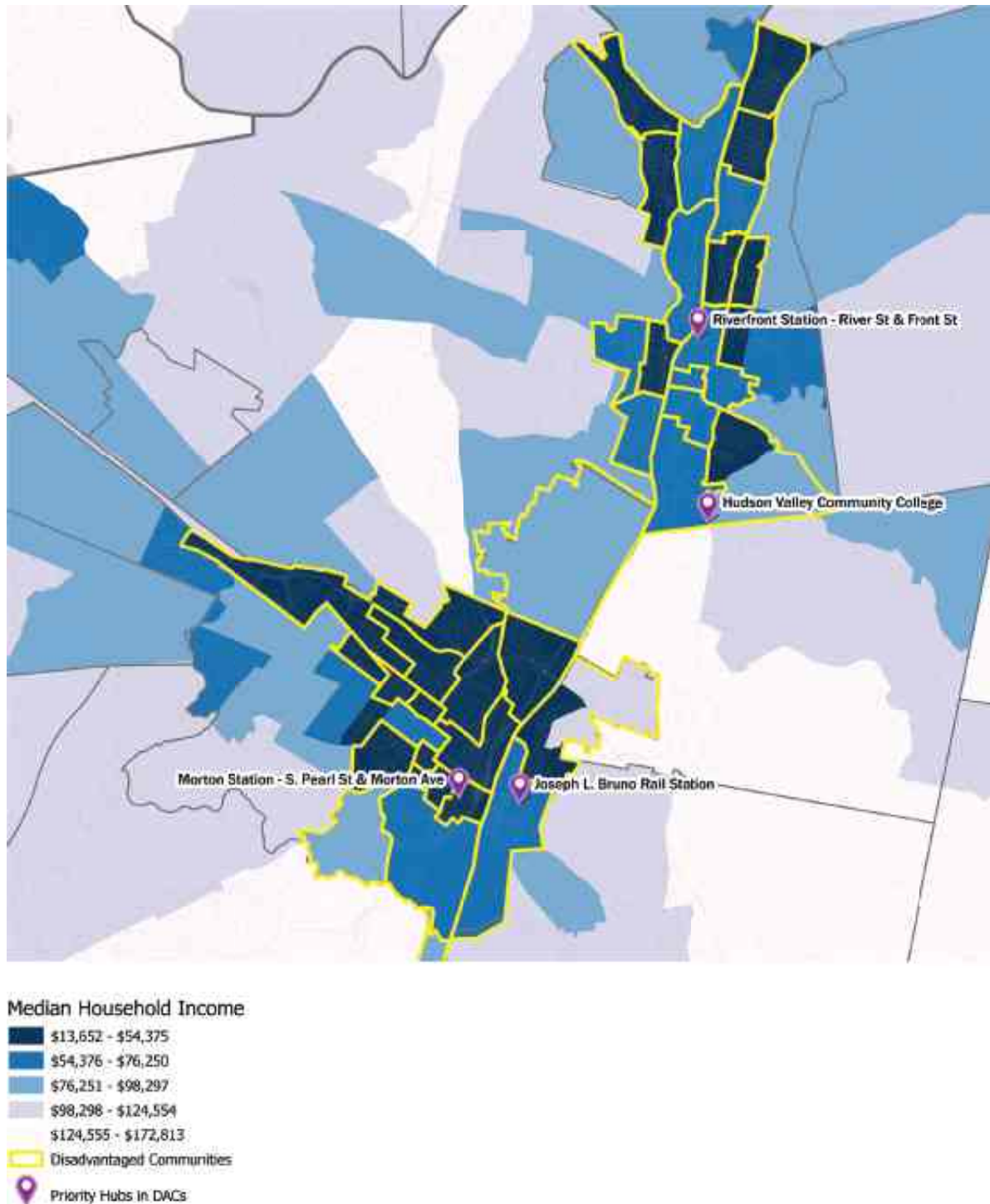


Figure 5: Median Household Income

9. American Communities Survey, 2023 5-year estimates

Vehicle Ownership Rates

Vehicle access is a key determinant of transportation needs. Figure 6 represents the vehicle ownership rates in and surrounding the proposed mobility hubs. Morton Station again ranks highest in zero-vehicle households (34.29%), followed by Riverfront (25.69%). The Joseph L. Bruno Rail Station and Hudson Valley Community College (HVCC) show similar rates (15.34% and 15.07%, respectively). While the Joseph L. Bruno Rail Station's rate is lower, it still indicates a significant portion of residents who may depend on public transit or shared mobility, particularly when combined with other factors discussed below.

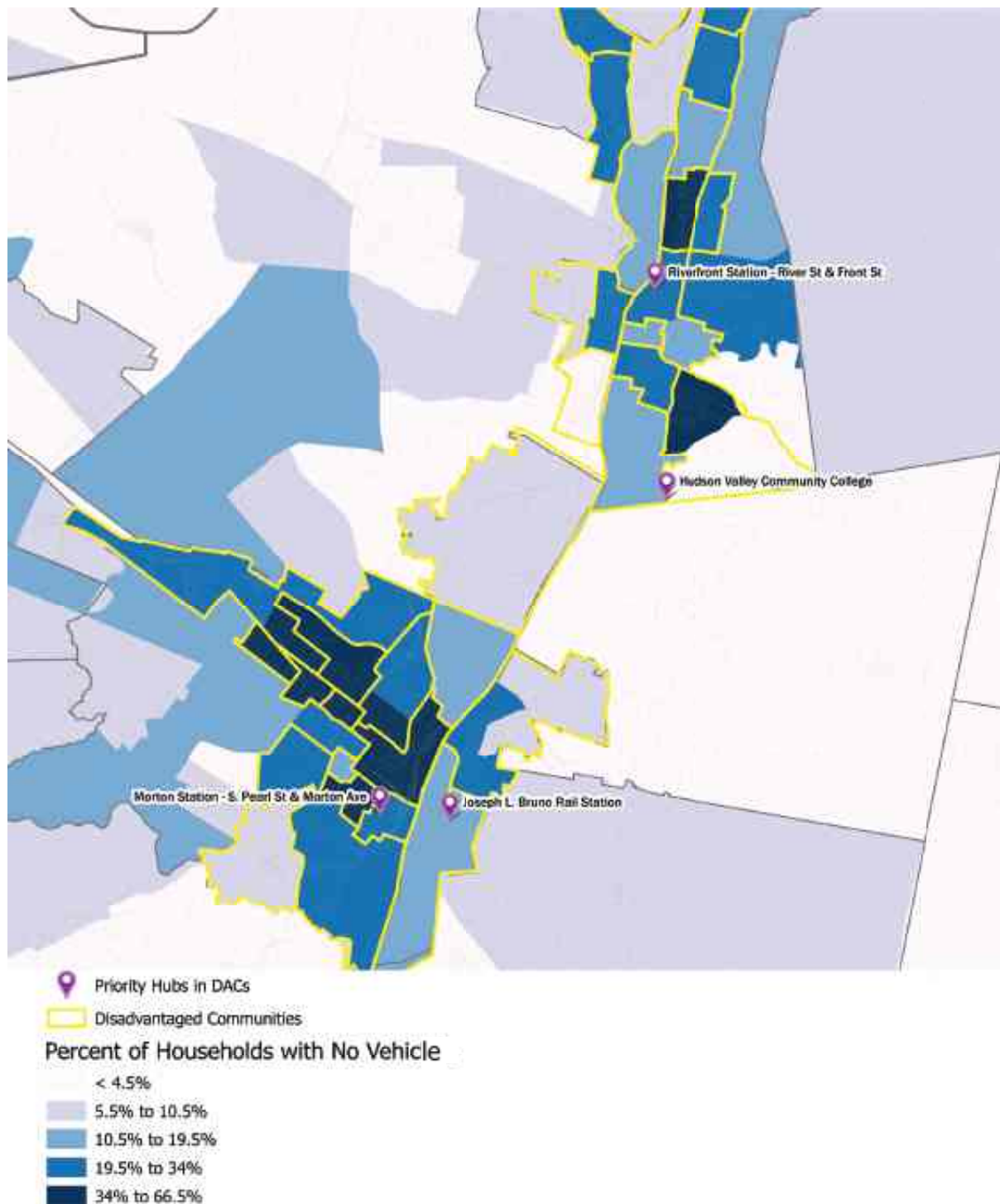


Figure 6: Percent of Households with no vehicle



Transit Connectivity

Figure 7¹⁰ illustrates the rate of public transit commuters across nearby census tracts, alongside the average daily boardings and alightings at corresponding CDTA stations. This combination of data offers insight into both the demand for transit at the neighborhood level and the actual usage of nearby transit infrastructure.

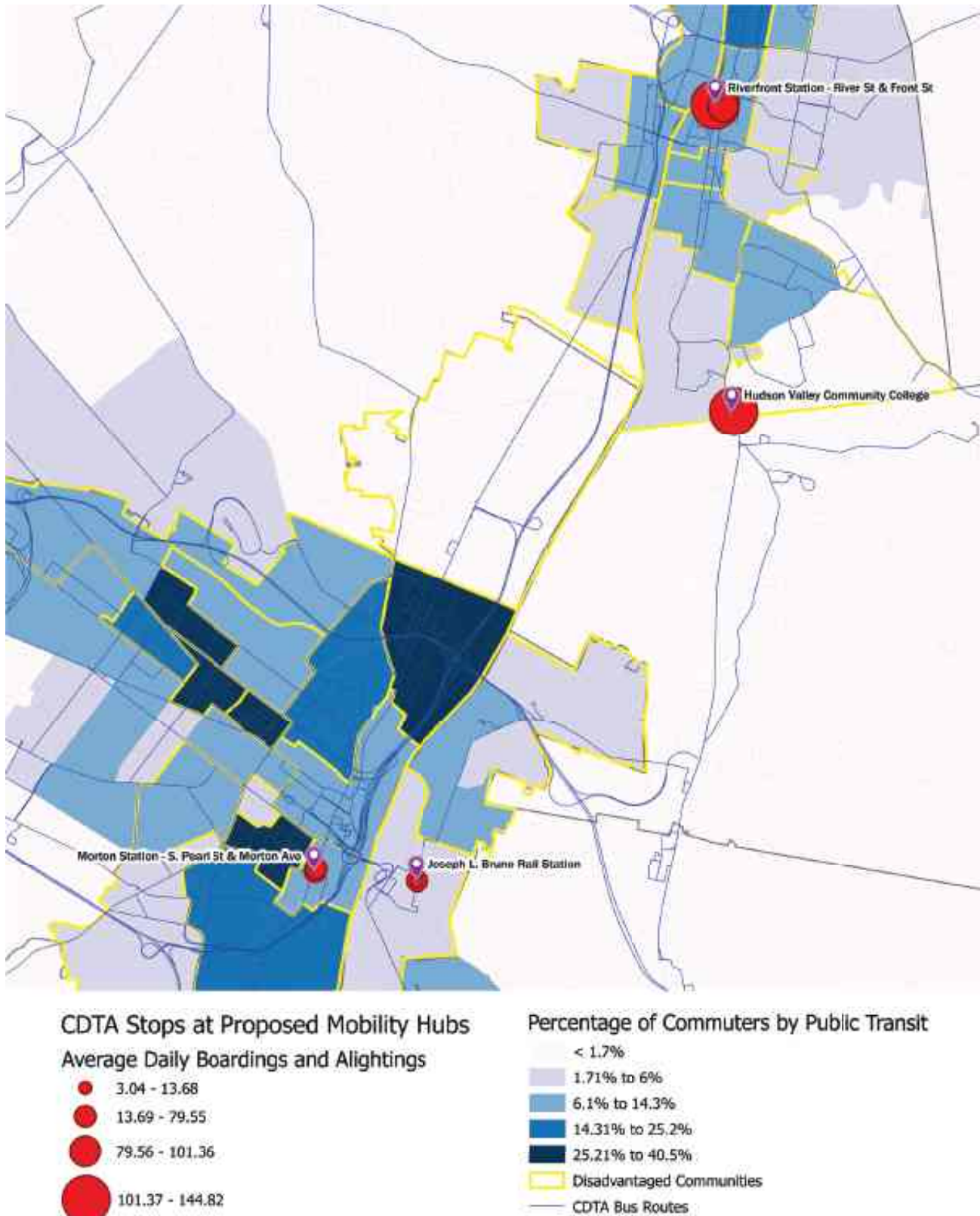


Figure 7: Public transit demand and station activity across the region

10. American Communities Survey, 2023 5-year estimates

Areas with higher rates of transit commuting but lower station usage may point to a mismatch between where transit customers live and the accessibility or convenience of existing CDTA stations. It may suggest that residents are accessing transit at other stations or could indicate limited first/last mile connectivity is a barrier to accessing transit. Understanding this discrepancy is essential for identifying opportunities to enhance multimodal integration. Strategic mobility hub placement could help bridge these gaps by improving access to CDTA services and better aligning mobility infrastructure with actual commuter behavior and needs.

The Joseph L Bruno Rail Station and Morton Station have comparably high discrepancies in public transit commuting rates and CDTA bus boardings, whereas Riverfront station has high transit commuting rates and high station usage, and HVCC has low transit commuting rates and comparably high station usage.

Proposed Mobility Hub	% of commuters by transit
Morton Station - Albany	9.5%
Joseph L. Bruno Rail Station - Rensselaer	6%
Riverfront Station - Troy	7.2%
Hudson Valley Community College - Troy	3.8%

Table 4: Transit commute rates near proposed mobility hub locations

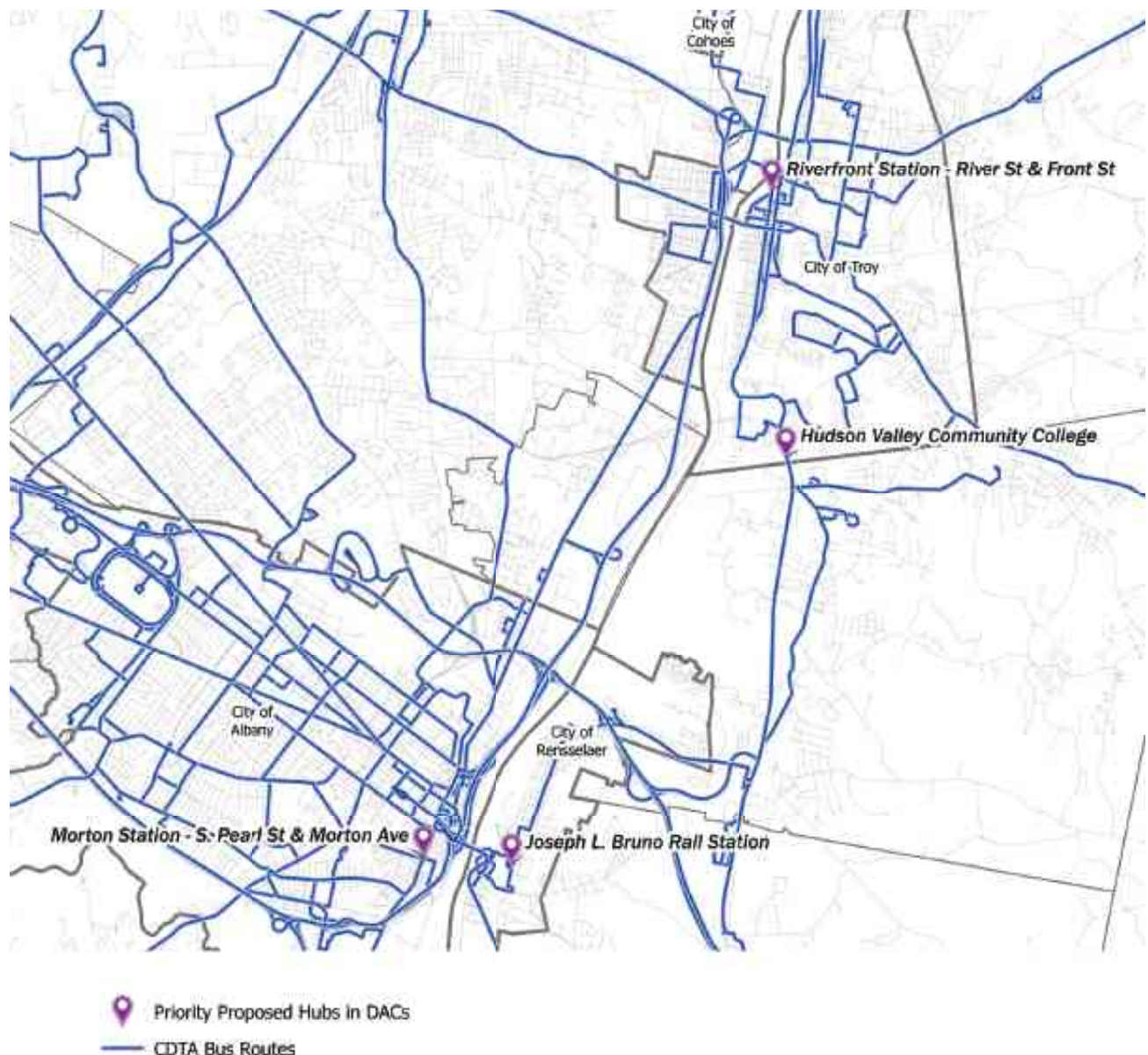


Figure 8: Priority Proposed hub locations in DACs



Figure 8¹¹ represents the service routes for CDTA bus service. Morton Station and Riverfront Station are notably served by CDTA's BusPlus BRT Blue Line, extending regional transit reach for the two stations. The Joseph L Bruno Rail Station is one transfer from bus plus service, and also is located along the Amtrak rail line, directly serving regional travelers accessing other areas of New York State and the northeast, meaning it has the furthest direct reach of any of the proposed hubs. The Rail Station has 899,048 annual boardings and alightings, presenting a substantial opportunity to capture a large volume of customers compared to the volume of customers at other proposed hub locations.

Access to Shared Mobility Options

Figure 9 shows the location of the current CDPHP *Cycle!* bikeshare and DRIVE CDTA e-carshare hubs relative to the proposed mobility hub sites. The availability of bikeshare and carshare is uneven. Morton Station is best served, with both CDPHP *Cycle!* and DRIVE CDTA services located within 100 yards. Riverfront Station has good bikeshare coverage and is within walking distance of carshare. In contrast, the Joseph L. Bruno Rail Station lacks direct access to either service. Though closer to these amenities than HVCC, it is separated by a river with no pedestrian-friendly crossings. This lack of connection is a key service gap, especially when considering the site's broader transit role and the lack of alternative mobility options nearby. While pedestrian connections are inconvenient between Albany and Rensselaer, the two cities are connected by the Empire State Trail, which is currently detoured under reconfiguration. Future plans to create bike access along the Livingston Avenue Bridge will further reinforce bike and pedestrian connectivity between the two cities. This presents an opportunity to provide bike options to rail station customers.

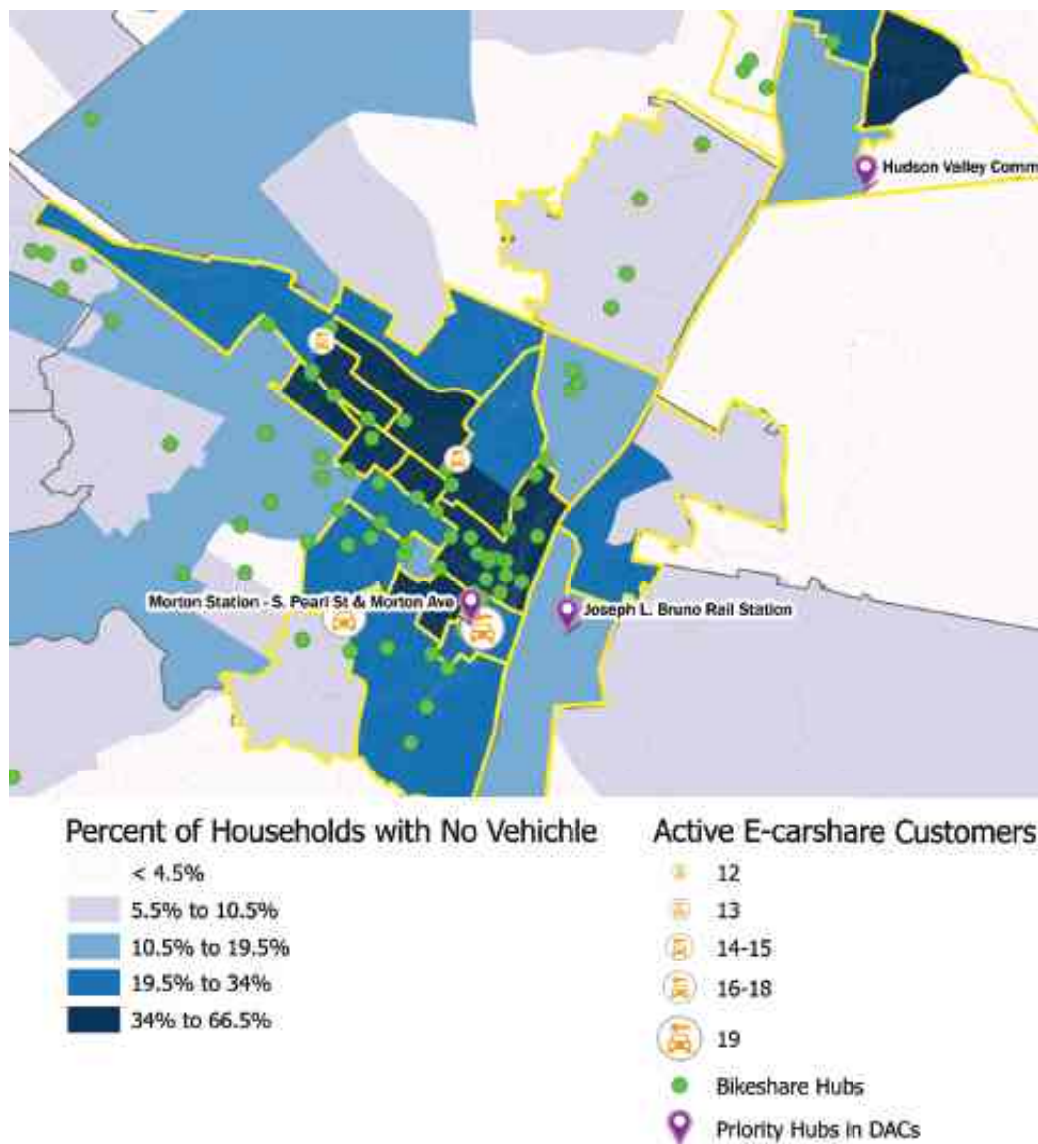


Figure 9: Proximity of bikeshare and carshare services to proposed mobility hub sites

11. National Transit Map Routes, United States Department of Transportation. 2025

Space Availability and Jurisdiction

Available space and jurisdiction are key factors CDTA has prioritized in identifying viable sites for mobility hubs in this plan. Among the four proposed locations, the Joseph L. Bruno Rail Station offers the greatest amount of available space for mobility hub integration. As a CDTA-owned and operated facility, it also provides the highest level of jurisdictional control, streamlining the siting and implementation process.

CDTA also owns a smaller parcel adjacent to Riverfront Station, which could support smaller-scale mobility infrastructure compared to the space available at the Rail Station. However the primary parcel adjacent to Riverfront Station is a vacant lot which may be redeveloped soon into a large apartment complex presenting an opportunity for future collaboration between CDTA and the developer to enhance electric shared mobility connections at this central downtown Troy site. Morton Station offers sufficient space within the public right-of-way to support an electrified bikeshare hub and sits next to a parking lot owned by Albany County, a supportive partner of CDTA, providing additional flexibility for integration.

In contrast, HVCC presents challenges due to limited available space and parking constraints. The site is under the jurisdiction of the college, which reduces CDTA's direct control and limits flexibility for siting mobility hub elements.

Mobility Hub Evaluation Matrix

Table 5 presents an evaluation matrix used to prioritize the proposed mobility hub locations. Each site was scored on a scale of 1 to 4 across multiple criteria¹², with a lower score indicating greater need or suitability. The cumulative score for each location reflects its overall priority, with the lowest total signifying the highest need based on the combination of assessed factors.

The Joseph L. Bruno Rail Station emerges as a high-need location when all variables are considered: it has significant transit potential, major service gaps in shared mobility, and the greatest logistical readiness for implementation. The combination of access barriers, jurisdictional readiness, and regional connectivity makes it the strongest candidate for mobility hub investment.

Proposed Mobility Hub	Median Household Income (low to high)	No vehicle access (high to low)	Transit Commuting rates (high to low)	CDTA stop utilization (low to high)	Regional Connectivity (high to low)	Existing Mobility Solutions (low to high)	Accessibility to Bikeshare (low to high)	Accessibility to Carshare (low to high)	Available Space	Total Score
Morton Station - Albany	1	1	1	2	2	4	3	4	2	20
Joseph L. Bruno Rail Station - Rensselaer	4	3	3	1	1	1	1	1	1	16
Riverfront Station - Troy	3	2	2	4	3	3	4	3	3	27
Hudson Valley Community College - Troy	2	4	4	3	4	2	2	2	4	27

Table 5: Evaluation matrix scoring proposed mobility hub locations by need and readiness

12. Ranking is determined using both quantitative and qualitative criteria. Quantitative criteria are based on objective metric rankings, while qualitative criteria evaluate factors such as direct service range, physical barriers, elevation changes, bikeability, and walkability to determine access.



The Joseph L Bruno Rail Station presents the greatest opportunity to fully develop a new electric mobility hub with multiple mobility integrations, however proposed and existing mobility hubs also present an opportunity to reinforce existing shared mobility options and wayfinding. As such the plan will further assess the Rail Station as a primary electric mobility hub, while also exploring recommendations that may be extended to other sites in future phases.

Primary Electric Mobility Hub

The Joseph L. Bruno Rail Station will be the primary electric mobility hub under this plan. This plan will investigate the following upgrades to the site:

- Addition of DRIVE and additional EV charging infrastructure
- Micromobility charging and storage infrastructure
- Addition of CDPHP *Cycle!* bikeshare on site
- Wayfinding Recommendations
- Bus Charging Infrastructure

The below section on Market Analysis will outline the demand for integration for these upgrades.

Hubs for Future Consideration

In addition to the primary electric mobility hub, Morton Station and Riverfront station also present an opportunity to expand transit's reach and improve customer experience. They present clear opportunities for integrating mobility solutions, including e-bikeshare charging infrastructure, carshare expansion and improved navigational infrastructure. As such, they should be prioritized in future considerations for CDTA mobility hub expansion. The operations section of this report further discusses operational considerations for expanding e-bikeshare charging infrastructure.

Operations

CDTA's bikeshare and carshare programs have established operational practices to build upon, making their expansion a streamlined process since they are building out existing proven program models that have become a bedrock of affordable transportation services in the region. Both programs offer their services at extremely low rates so that these solutions are accessible to DAC populations.

CDPHP *Cycle!* is a 24/7 on demand service that operates seasonally from March through December due to climate. An expanded program will continue to offer the same fare structure to users that is currently offered (See Consumer Cost Impact Section below). The program recently launched an Access Program that provides a discounted monthly membership to DAC residents affiliated with the Albany Housing Authority.¹³ Expansion of the access program is anticipated to help increase ridership and accessibility of the program amongst DAC populations. DRIVE Carshare also operates as a 24/7 on-demand service, and it operates year round. An expanded DRIVE Carshare program with more locations and cars available would follow the same pricing structure offered through the program currently (See Consumer Cost Impact Section below).

Electrified bikeshare hub technology, while not fully proven, has made real improvements in real-world settings in recent years. CDPHP *Cycle!* has piloted at-hub charging infrastructure through targeted deployments and technology testing. This includes small-scale integration with re:Charge charging units in Amsterdam, New York, as well as testing Drop Mobility e-bikes with internally developed charging solutions. Bikes currently in the CDPHP *Cycle!* system would need to be retrofitted to be compatible with technology providers. The retrofit cost is substantial, and would likely require several funding streams to retrofit the entire CDPHP *Cycle!* fleet (see sections on Technical Analysis and Infrastructure Assessment for more information). As such, initial expansion should focus on a single geographic area to ensure smooth deployment. This approach allows for efficient monitoring, quick response to any technical issues, and easier manual battery swaps if needed, supporting a reliable and scalable rollout. As the system becomes proven in large-scale deployment, the operation can be replicated across different municipalities

13. CDPHP *Cycle!* Access program <https://www.masstransitmag.com/alt-mobility/shared-mobility/bicycle-scooter-sharing/press-release/55306571/capital-district-transportation-authority-cdta-cdta-piloting-cdphp-cycle-membership-program-with-albany-housing-authority>



and zones in the CDPHP *Cycle!* service area. Such an approach has been piloted in two CDPHP *Cycle!* hubs in Amsterdam, New York, though it has not yet been deployed in other parts of the system. With on-site charging infrastructure, the need for manual battery swapping is reduced, which minimizes vehicle miles traveled by service staff and keeps bikes in circulation longer. This improves overall service availability for customers while reducing operational costs and environmental impacts.

Albany is a logical geography to trial this at a large scale deployment. The CDPHP *Cycle!* operations team is based in Albany, and will have greater flexibility in mitigating any challenges with new technology. The lack of existing bikeshare in Rensselaer also is an opportunity, as a single electrified hub can be placed at the Rail Station to promote cross-river connectivity, while limiting the risk of the retrofitted fleet tangling with incompatible bikes. Potential hubs for electrification are further detailed in the Appendix of this report.

Once trialed, this approach can be replicated to surrounding communities such, using operational lessons learned from large scale deployment to inform strategic expansions.

Market analysis

The evaluation matrix (Table 6) utilized in the mobility hub identification process demonstrated substantial siting justification for Joseph L. Bruno Rail Station as a fully developed electric mobility hub. The following section outlines estimated demand for the mobility services based on demographic data and current shared mobility and public transportation usage patterns. Analysis thereof will also include assessments of the demand in Albany and Troy for future mobility hub development consideration.

Vehicle Ownership Rates

Vehicle ownership rates in the surrounding communities demonstrate a clear need for alternative transportation options, both locally and regionally. In Albany, 67.35% of households have access to one or fewer vehicles, with 8,662 households reporting no vehicle at all. In Troy, 68.96% of households fall into this same category, including 4,504 without any vehicle access. Rensselaer shows a similar trend, with 60.66% of households reporting one or fewer vehicles and 670 households without a vehicle. These figures reveal a strong reliance on alternative transportation modes to meet daily travel needs.

Improving access to efficient and affordable mobility options is essential to serving these transportation-limited households, particularly those with more residents than vehicles. Enhanced mobility infrastructure would not only improve access to jobs, education, healthcare, and services for these residents, but also reduce reliance on personal vehicles for those who do own one. By addressing this gap, regional efforts can significantly reduce vehicle miles traveled, lower emissions, and promote more equitable access to transportation across the Capital District. Reducing reliance on personal vehicles can have substantial impacts on consumers. AAA found that in 2024, the average annual cost of owning a vehicle was \$12,297.¹⁴ Increasing access to alternative modes of transportation will not only aid in mobility for people who cannot afford a personal vehicle, but also can reduce the transportation costs for households with multiple cars.

City	Population	Number of Occupied Households	Persons per Household	Households with No Vehicle	Households with One Vehicle	Households with 1 or less vehicle
Albany	101,228	44,875	2.26	8,662	21,560	30222 (67.35%)
Rensselaer	9,310	4,425	2.10	670	2,014	2684 (60.66%)
Troy	50,607	21,323	2.37	4,504	10,201	14705 (68.96%)

15

Table 6: Vehicle ownership rates by city, underscoring transportation needs in low-vehicle households

14. Breaking Down the Cost of Car Ownership. AAA. September, 2024

15. American Communities Survey, 2023 5-year estimates



Existing Service Usage

Amtrak Rail Service

Amtrak reported a total of 899,048¹⁶ boardings and alightings at the Joseph L. Bruno Rail Station in the 2024 fiscal year, highlighting the station's role as a major transportation hub in the Capital Region. This high volume of passenger activity presents a significant opportunity to enhance and expand multimodal mobility options for both residents and visitors traveling to and from the station. Many of these travelers require convenient first/last mile connections to complete their journeys. See the Impacts Assessment section for more information.

The community engagement process indicated that both convenience and awareness of alternative mobility options are substantial barriers to adoption. This presents an opportunity to improve multimodal options, improve wayfinding methods, and improve connectivity to encourage further adoption of current and proposed mobility solutions.

CDTA Bus Service

There are a projected 28,590 annual boardings and alightings at the two CDTA bus stops located adjacent to the rail station. This is just 3.18% of Amtrak volume captured by transit. Despite this, 6% of people in the surrounding census tract, 8.5% of Albany, 5.5% of Rensselaer commute primarily through transit, indicating a substantial gap in first/last mile connectivity for local users.

DRIVE Carshare - Albany

Carshare vehicles in Albany currently see 6 to 8 hours of use per day, demonstrating strong and consistent demand. This high utilization rate supports the case for expanding carshare services in the region. Notably, there is currently no carshare presence in Rensselaer, despite its proximity to major transportation infrastructure and regional travel activity.

With CDTA bus routes directly serving the station, the potential to convert arriving passengers into DRIVE customers is high. Typical trips from this hub are anticipated to include local errands, day trips, and transportation to and from meetings or appointments further reinforcing carshare's value as a flexible, emissions-free extension of regional transit. Introducing 2 to 4 DRIVE vehicles at the Rail Station would serve the dual purpose of providing carshare service to the surrounding DAC communities in the City of Rensselaer while also meeting the needs of rail passengers, many of whom commute for work and spend less than 24 hours in the Capital District. These short-term travelers represent an ideal market for flexible, convenient vehicle access. Strategically locating carshare at the train station would provide a critical first/last mile option while supporting a shift away from private vehicle dependence. This placement would also support the surrounding community, providing flexible zero-emission vehicle access for people who do not have reliable access to a personal vehicle.

CDPHP Cycle Usage - Albany

Annual bikeshare usage in nearby Albany was approximately 30,000 trips in the 2024 riding season. Between 2022 and 2024 the bikeshare system in Albany both expanded service coverage and added e-bikes to the fleet, resulting in a 34.3% increase in total miles traveled. Improving access to e-bikeshare further increases the likelihood of personal vehicle trip replacement by 10%.¹⁷ Rensselaer does not currently have a dedicated bikeshare hub, though the CDPHP Cycle service area extends to the station. Adding a dedicated electrified bikeshare hub at the station presents a substantial opportunity to improve bikeshare ridership and reduce car traffic.

Pairing electric bikeshare service with at-hub charging infrastructure creates additional opportunities to reduce vehicle miles

16. Amtrak in New York Fiscal Year 2024 Report

17. Basu, R. & Ferreira, J. (2021). Planning car-lite neighborhoods: Does bikesharing reduce auto-dependence? Transportation Research Part D: Transport and Environment, 92, 102721. <https://doi.org/10.1016/j.trd.2021.102721>

traveled. According to CDPHP Cycle staff, operational driving within Albany currently totals around 7,000 miles per year. Approximately half of these trips are dedicated to battery swapping, a task that would be significantly reduced with on-site charging. This shift would not only decrease greenhouse gas emissions but also lower operational costs for CDTA. The technical analysis section of this report delves further into the operational opportunities an electrified hub system presents.

Annual Household Income

The proposed mobility hub in Rensselaer, and potential future hubs in Albany and Troy, are all located within New York State-designated DACs. This presents a significant opportunity to advance transportation equity by delivering affordable, reliable, and accessible mobility services to underserved populations.

In the census tract surrounding the proposed Joseph L Bruno Rail Station electric mobility hub, 1,316 households (35.87%) earn less than \$50,000 annually, placing them below 60% of the area median income (\$51,643.20). Similar economic conditions exist in neighboring communities: 1,565 households (35.37%) in the City of Rensselaer, 18,787 households (41.87%) in the City of Albany, and 9,526 households (44.67%) in the City of Troy also fall below this income threshold. These figures underscore a regional need for low-cost transportation options that reduce the financial burden of car ownership and expand access to jobs, services, and daily needs.

Plan	Pricing Structure				Daily 15-minute trips		Daily 30-minute trips	
	Recurring Cost	Unlocking Fee	Free Riding Time	Per-minute Rate	Per-minute Rate	Cost Per trip	Monthly Cost	Cost per trip
Pay as you go	-	\$1.00	-	\$0.15	\$97.50	\$3.25	\$165.00	\$5.50
Monthly	\$15/ month	-	30	\$0.15	\$15	\$0.50	\$15	\$0.50
Seasonal	\$85/ year	-	30	\$0.15	\$7.08	\$0.24	\$7.08	\$0.24

Table 7: CDPHP Cycle! plan options with estimated costs for varying trip lengths.

Given these income levels, pricing will be a critical factor in the success of any new mobility solution. Fare structures should be designed to be meaningfully more affordable than the cost of maintaining a personal vehicle, particularly for lower-income households, while still ensuring financial sustainability for long-term operations.

Consumer Cost Impact

The planned improvements at Joseph L. Bruno Rail Station introduces 3 mobility solutions and their cost to customers. They include introducing bikeshare, personal micromobility storage and charging, and electric carshare. The following subsections assess the fee structures for the proposed solutions to highlight their opportunities to provide low-cost mobility solutions.

CDPHP Cycle! Fare

Since the program's beginnings, CDTA has strived to keep customer costs extremely low for CDPHP Cycle! to encourage more adoption of this transportation option. Table 7 outlines the pricing structures customers can choose from, as well as projected end-costs by differing e-bike trip lengths. These fares expected to continue at the same rates through any future expansions of the program.

One Time Application Fee	\$20
Per Hour Rate	\$5
Included Milage	150/rental
Overage Rate	\$0.35/mile

Table 8: DRIVE carshare pricing structure and rental details



DRIVE Carshare Fare

There is currently for-profit car rental service at the rail station, operated by Enterprise. This demonstrates a clear need for rental cars in the market. Currently Enterprise pricing ranges from \$123 to \$300 dollars, charged at a per-day rate, which may be unaffordable to customers who occasionally need access to a vehicle for short-term rentals. Comparably, the rates for DRIVE are lower and more flexible, providing a more affordable option to customers (see table 8 for pricing structure). It is anticipated that these fares will continue into the future, through any expansions of the program. The per-hour rental rate encourages shorter trips, rather than Enterprise's per-day model. Furthermore, Enterprise does not offer electric vehicle rental at this location, meaning the addition of DRIVE service to the Rail Station would improve both the affordability of shared vehicle rental, as well as reduce the reliance on gas powered personal vehicles. Additionally, adding additional DRIVE carshare locations in Albany could bolster the service's ability to meet demand identified in the community engagement process of this plan.

Personal Micromobility Storage and Charging Rates

The rates of micromobility storage and charging lockers can be set by the operator, meaning the pricing can be adjusted to the elasticity of the community. Pricing should be set to minimize access barriers, and encourage rail customers to take personal micromobility to the station and store for the duration of their trip.

Project partners

Albany Housing Authority is a current partner of CDPHP Cycle!'s Access Program initiative and is committed to helping its DAC residents have greater access to shared mobility programming through CDTA's mobility programs. The Housing Authority is looking forward to building upon its current work with CDPHP Cycle! to continue expanding affordable transportation access to its residents and helping to facilitate ongoing community input as CDTA evolves and expands these services.

Capital Region Transportation Council (CRTC) serves as the federally designated Metropolitan Planning Organization (MPO) for New York's Capital Region. The Council leads regional transportation planning, coordinates infrastructure investments, and ensures long-range transportation strategies align with equity, sustainability, and accessibility goals across Albany, Rensselaer, Saratoga, and Schenectady counties.

Capital Streets is a nonprofit advocacy organization dedicated to improving walking, biking, and public transit infrastructure across the Capital Region. Through community engagement, policy advocacy, and coalition-building, they work to reduce car dependency and create safer, more inclusive streets that serve the needs of all residents, regardless of age or ability.

Drop Mobility is a North American provider of shared micromobility technology, offering turnkey solutions for e-bike and scooter share programs and is the current technology and manufacturer of the CDPHP *Cycle!* fleet. In addition to their fleet hardware and customer app platform, Drop is currently developing a proprietary e-bike charging infrastructure system, scheduled for deployment in summer 2025. Their integrated approach combining fleet operations, software, and emerging charging capabilities positions them as a key partner in building reliable, micromobility shared systems.

Mobility Development Operations (MDO) is a nationwide leader in planning, development and operations of equity focussed electric carshare programs. MDO operates DRIVE in partnership with CDTA. DRIVE provides 24/7 access to electric vehicles for short-term rental. In addition to operations, MDO supports CDTA in planning and expansion opportunities for the program.

re:Charge is a Capital Region based startup developing universal, wireless charging infrastructure for shared micromobility systems. Their charging-as-a-service model enables low cost, on street charging for e-bikes and scooters using wireless power transfer technology. re:Charge has conducted field testing in partnership with Drop Mobility and CDPHP *Cycle!*, with a focus on reducing operational costs, enhancing safety, and improving accessibility across micromobility networks.



Technical Feasibility and Recommendations

This section focuses on the technical feasibility of building out electric charging infrastructure and other mobility hub improvements focussed at the Joseph L. Bruno Rail Station, as well as some satellite locations for electric charging infrastructure for bikeshare.

Shared Micromobility Charging Infrastructure

As stated in the Market Analysis section, inclusion of electric micromobility charging infrastructure will reduce bikeshare operations and maintenance costs, and maximize utilization of the fleet, as there will be less operational downtime for bikes. The below section details charging infrastructure providers and investigates feasibility of these technologies for this project.

re:Charge

re:Charge is a prospective project partner that is a provider of wireless charging infrastructure for electric micromobility. In 2024, re:Charge successfully demonstrated its first real world deployment in partnership with CDTA and Drop Mobility. The pilot was conducted in Amsterdam, New York on the outer edge of the CDPHP *Cycle!* e-bike share network and served as a beta test for a single wireless charging station. Amsterdam was an ideal test site due to its geographic isolation, where the time and labor required to perform manual battery swaps from Cycle's operations shops in Albany and Saratoga Springs had been highly inefficient. With re:Charge's infrastructure in place, the system saw significant operational improvements, including reduced labor costs, better service reliability, and enhanced user experience.

To enable the pilot, the partners secured necessary approval, and worked with Drop Mobility (bike technology) to upgrade all bikes in the Amsterdam fleet, including Internet of Things (IOT) adjustments. This included modifying the front basket design to align with the re:Charge station's wireless connection interface. Because Amsterdam operates as a smaller, self-contained satellite system within the broader bikeshare network in the Capital Region, it provided a manageable and low risk environment for testing and refining the technology without significant financial investments by all parties.

Drop Mobility

Drop Mobility is a prospective project partner that is a service and infrastructure provider for electric micromobility systems. They introduced its proprietary charging infrastructure at the 2024 North American Bike and Scooter Share Association Conference and formally presented it to CDTA later that year for future consideration. A live demonstration with CDTA is currently being discussed for 2025. In parallel, Drop is actively testing this infrastructure in markets across the U.S. and Canada, making it a central focus of their operational evolution. According to Drop, the system will be ready for mass deployment in late 2025 or early 2026. As with re:Charge, upgrading would be required for the existing CDPHP *Cycle!* fleet in order to enable compatibility, though this type of modification is already anticipated in other markets that Drop currently serves.

Skyhook Solar

Skyhook Solar provides solar-powered, modular charging stations designed for shared micromobility systems such as e-bikes and scooters. Each unit features an integrated battery storage system that collects energy during daylight and off-peak hours, allowing for consistent, off-grid charging even when solar generation is low. The canopy of bifacial solar panels connects directly to the storage battery and can be integrated with a range of micromobility and light electric vehicle (EV) charging partners. Skyhook's technology is compatible with fleet management platforms and offers the flexibility needed for deployment at multimodal mobility hubs. Their systems are already in use with bikeshare programs and supporting hardware in cities including Detroit, Washington, D.C., Boulder, and several others. Skyhook has also been building a partnership with Drop regarding integration of their solar canopy, but has the ability to adjust to other technologies as well. In addition to Skyhook Solar Charging for micromobility, Skyhook also provides a charging Vault for safe battery charging (outside the bike). This provides better energy efficiency than plugging to the grid, while also providing safe charging infrastructure in a Underwriters Laboratories (UL) certified charging locker.



Figure 10: Skyhook 6 Panel Solar charging a bikeshare system

General Recommendations Shared Micromobility

CDPHP *Cycle!* is at an inflection point in its evolution toward a fully electrified system utilizing charging infrastructure. Operating over 400 e-bikes in more than six municipalities, the system can adopt charging infrastructure in a phased approach starting with targeted upgrading of its existing standard bike fleet and selective electrification of hub sites. Upgraded bikes maintain full compatibility with all existing docking infrastructure, offering flexibility during the transition. However, new charging hubs will only serve bikes that have been modified accordingly. To maximize operational efficiency and demonstrate full system potential, we recommend designating Albany as the launch municipality, electrifying approximately 12 strategic station locations including the Joseph L. Bruno Rail Station to anchor intercity, regional connectivity and first/last mile connections. This would require upgrading only a portion of CDPHP Cycle Fleet. See Table 9

Company	Bike Upgrade	Total bikes	Total Bike Cost	Total Electric Racks	Rack Cost	Install/ construction costs per site	Number of hubs	Total Electric Racks	Grand Total (Racks and Bikes)
re:Charge-e	\$765	150	\$114,750	100	\$290,000	\$9,000- 14,000	12	\$398,000- \$458,000	\$512,750- \$572,750
Drop	\$400	150	\$60,000	100	\$200,000	\$9,000- \$14,000	12	\$308,000- \$368,000	\$368,000- \$428,000

	IOT	Electricity	Yearly Cost
re:charge-e	\$11,000	\$5,000	\$21,000
Drop	\$11,000	\$5,000	\$21,000

Table 9: Cost comparison of shared micromobility electrification options for CDPHP Cycle!

In addition to the above costs, ongoing costs related to electric and IOT also need to be considered. For electric consumption, We are estimating an average energy draw of 0.6 kWh per charging rack per day, representing a full charge cycle for a single e-bike. Over a 260-day operational season, this results in: Assuming a utility rate of \$0.15 per kWh, the estimated annual electricity cost for operating 100 charging racks would approximately be \$2,340 per year.¹⁸

We also recommend exploring the deployment of both a Skyhook Solar and a Skyhook Vault system at the Joseph L. Bruno Rail

18. Annual energy use per rack: 0.6 kWh × 260 days = 156 kWh. Total energy use for 100 racks 156 kWh × 100 = 15,600 kWh annually.

Station. These solar-powered charging solutions offer a sustainable method of supplementing grid power and improving system resilience. The Skyhook Solar canopy collects and stores solar energy in an integrated battery unit, which can then be used to charge e-bikes via compatible racks from vendors such as Drop Mobility or re:Charge. When paired with the Skyhook Vault, a secure, battery-powered storage and charging unit, the system can support both micromobility and light electric vehicle charging needs. See Table 10.

Company	Type of Unit	Unit Cost	Installation	Potential Electrical Upgrades	Notes
Skyhook Solar	4 Panel	\$50,000	\$4,000	\$3,000	Up to 15 bikes charging
	6 Panel	\$60,000	\$4,000	\$3,000	Up to 20 bikes charging
	Vault	\$6,000	\$500	\$3,000	Outdoor battery charging

Table 10: Estimated costs for Skyhook Solar charging units

Skyhook Solar could potentially reduce all annual energy costs associated with a 10-15 bike station. Beyond financial benefits, the use of clean, off-grid energy enhances the program's sustainability profile and positions the Joseph L. Bruno Rail Station site as a model for green, multimodal mobility hubs in the region.

Installation Considerations for Charging Racks

Installation planning must account for electrical capacity at each site. We recommend deploying charging racks in the public right-of-way, using existing infrastructure such as CDTA BRT stations and municipal streetlights, provided they remain below the wattage limits of those sources. These systems typically support 600–1,000 watts, which is generally sufficient for smaller hubs of 5–10 racks. Staying within these limits is essential, as exceeding capacity may trigger the need for electrical upgrades costing \$3,000 to \$10,000 per station.

At the Joseph L. Bruno Rail Station, we recommend installing a station (10-15 bikes) to support higher demand and multimodal connections. Given that electrical conduit infrastructure is already in place, it is likely that the site can accommodate additional chargers without the need for significant electrical upgrades, making it a cost-effective location for high-capacity deployment.

Electric Carshare

As previously stated in the market analysis section above, there is anticipated to be strong demand for DRIVE if the service adds vehicles at the Joseph L. Bruno Rail Station.

Historically, DRIVE has encountered some challenges in expanding its carshare service. One key issue is securing additional space, as efforts to install EV charging ports in the public ROW are often slowed by permitting delays and regulatory hurdles. DRIVE staff also noted recurring problems with the reliability and durability of the electric charging infrastructure currently in use. Units installed in public ROW locations have experienced breakage and minor vandalism, and repairs have been complicated by unclear lines of responsibility between municipalities and the carshare operator. These issues have highlighted the need for more resilient equipment and streamlined coordination among partners to ensure timely maintenance and system uptime.

General Recommendations Electric Carshare

The proposed Joseph L. Bruno Rail Station electric mobility hub is located within a parking lot with existing EV charging infrastructure. Our recommendation is to utilize the existing electrical conduit system to support the expansion of EV charging capacity, avoiding the need for costly new construction. Currently, the site hosts one dual port ChargePoint EV charger servicing 2 private vehicles. To support the integration of EV carsharing, we propose installing one additional dual port charger, dedicated specifically to two to four DRIVE vehicles. Similar to the current private ChargePoint charger, we recommend using either CPF50 that is dedicated to private fleet vehicles, or CT4000 for public use as well. Both have security systems that can be used by DRIVE to prevent non-carshare vehicles from accessing it and warranties for fixing. Table 11 displays the estimated costs associated:



Charger Model	Hardware + Software	Install Estimate	Total	Annual Electricity ¹⁹	Annual Software
CPF50 (Dual-Port)	\$2,300	\$13,500	\$15,650	\$600-\$1000	\$250-350
CT4000 (Dual-Port)	\$8,750	\$13,500	\$22,250	\$600-\$1000	\$400-600

Table 11: Hardware, installation, and annual costs for proposed dual-port EV chargers.

Finally, operational costs associated with car sharing have been provided by DRIVE. Estimated yearly costs per car is \$28,000 for a turnkey solution—including the purchasing of the vehicle by the operator

Private Micromobility Charging

In addition to electric charging for shared mobility programs, our community engagement processes also revealed interest in charging and storage solutions for personal electric micromobility devices. These types of solutions are increasingly becoming more important not only for encouraging more modal shift away from automobiles, but also these solutions are helping to overcome concerns related to safe charging and mitigation of battery fires. While several technologies have emerged in recent years, there remains no clear market leader or universally accepted solution. However, based on our interviews and industry research, we believe Bikeep, in partnership with Dero, currently offers the most promising technologies. Their offerings include two standout products: A secure bike locker with built-in e-bike charging capabilities and an innovative public bike rack system with integrated locking and charging hardware.

Both solutions emphasize safe, tamper-resistant charging and enable user-paid access, making them well-suited for high-density urban areas, residential zones, and transit-adjacent sites where secure, scalable private micromobility charging is essential.



Figure 11: Bikeep in partnership with Dero with secure storage lockers (left) and secure charging bike racks (right).

General Recommendations Private Micromobility Charging

Private micromobility charging is expected to grow in importance as e-bike and e-scooter ownership expands across the Capital Region. While not a direct service offered by CDTA, supporting this trend aligns with the agency's broader mission to improve mobility and reduce transportation barriers. We recommend that CDTA explore the deployment of secure, user-paid charging lockers at strategic locations such as transit hubs, park-and-rides, educational campuses, and high-density residential areas. Doing so would position CDTA as a leader in supporting safe, modern micromobility infrastructure, while addressing rising demand for reliable private charging solutions. Estimated costs associated with Bikeep's charging solution.

19. Assuming 20,000 miles per year with, 0.347 kWh/mile

Company	Type of Unit	Unit Cost	Annual IOT Cost	Electricity Yearly	Notes
Bikeep	Electric Locker	\$5,000	\$500	\$23	\$1-\$10 per month of revenue per member
	Smart Charging Hub	\$18,000	\$10,000	\$115	5 bike hub, 1-\$10 per month of revenue per member

Table 12: Estimated costs associated with Bikeep's charging solution

Electric Bus Charging

As the first transit agency in Upstate New York to introduce electric buses into its fleet, CDTA is a proven leader in bus electrification initiatives. Joseph L. Bruno Rail Station also presents opportunities for on-site electric bus charging for mid-route charging of CDTA electric buses. While most transit agencies including CDTA re-charge their electric bus fleet at bus maintenance facilities, some transit agencies have implemented charging solutions that re-charge electric buses while they are on short layovers at end of route and in some cases, mid-route stops. Such charging, referred to collectively as mid-route charging, can help increase operational efficiency for transit providers by reducing the need to rely solely on charging at maintenance facilities.

While other technologies such as in-ground conductive or inductive pads have been in development, the more tested technologies for mid-route charging use an overhead pantograph. Pantographs are a mechanical arm that connects an electric bus to an overhead charger by either extending upwards from the bus or downwards from the overhead charger. CDTA's fleet of New Flyer Xcelsior CHARGE 40-foot electric buses charge via pantographs at CDTA's Albany garage at 110 Watervliet Ave. Some transit agencies such as King County Metro (Seattle, WA) and IndyGo (Indianapolis, IN) have installed mid-route charging utilizing overhead pantograph technologies.



Figure 12: McKinstry mid-route bus charger, King County Washington

To install mid-route overhead charging at the Joseph L. Bruno Rail Station, CDTA would need to locate the charging off street since there is not currently enough space in the right of way to accommodate bi-directional bus charging along East Street in addition to existing vehicle travel lanes. To build out a mid-route bus charging hub of a big enough scale at the Rail Station, CDTA would need to acquire the buildings located at 501 East Street and demolish the current structure. Another barrier to mid-route charging at this site is the use case, since there are no existing CDTA bus routes that terminate at the Rail Station. New routes that start/end at this location would make for a better use case for mid-route charging at this site. The location of mid-route charging at the Rail Station is explored below in Phase 2 of the Site Identification.



Other Findings

Wayfinding/Signage

Last year, Joseph L. Bruno Rail Station welcomed nearly 889,048 travelers, presenting a significant opportunity to connect passengers with regional mobility options such as CDTA buses, CDPHP *Cycle!*, and DRIVE. Through site observations and stakeholder interviews, the project team identified potential adjustments in wayfinding and signage as a key strategy to better convert these travelers. Currently, guidance toward onward mobility choices is limited, with few prominent visual cues directing passengers from the train platform to available services. Enhancing signage particularly near the main exit with clear directions to the electric mobility hub, well placed QR codes for app downloads, and promotional incentives (such as ride credits) could help convert more rail users into multimodal CDTA customers. Even modest additions like branded pavement decals or pole signage could strengthen awareness and boost adoption of shared mobility services at this important gateway.

In addition, minor adjustments to the current Soofa signs (Figure 13) could be considered. The current signage is a useful foundation for informing travelers about local mobility options, but several refinements would improve its effectiveness. Its current placement requires users to stand in or near active drive lanes, presenting both safety and visibility challenges; relocating the sign closer to the station entrance or Mobility Hub would better align with pedestrian flow. The static side currently features a general QR code linking to CDTA's homepage replacing this with program specific QR codes for CDPHP *Cycle!* and DRIVE would create a more direct user experience. Additionally, the digital display still highlights FLEX, a service no longer offered at this location, and could be better utilized to promote active services through updates or new customer incentives. These adjustments would strengthen the sign's utility and support greater adoption of all services.

There is also opportunity to improve signage and differentiation for ride hailing drop off/pick up areas and drop off/pick-up for personal vehicles. Currently there is limited space for drop off and congestion can occur easily when influxes of passengers are arriving or being dropped off for a train. Clearer signage designating a drop off location for ride hailing services could help relieve congestion.



Figure 13: Existing Soofa signage at the Joseph L. Bruno Rail station

Lighting

The Project Team discussed lighting improvements with CDTA, though it was not a major concern raised during interviews or surveys. Nonetheless, targeted upgrades such as incorporating energy efficient technologies like motion sensing dimmers and LED fixtures could significantly enhance the mobility hub's sustainability. These improvements would also support the site's evolving role as a community focused space, reinforcing its placemaking goals beyond simply functioning as a parking lot.



Site Plan Implementation

The below site plan recommendations are broken up into Phase 1 and Phase 2 recommendations at the Joseph L. Bruno Rail Station. Based on the technical analysis above, Phase 1 encompasses make-ready improvements that fit within the scope of NYSERDA's Clean Mobility Program. Phase 2 outlines additional improvements to the site that require additional land acquisition and funding sources outside of PON 5739.

Proposed Phase 1

To support the proposed mobility enhancements, Phase 1 of the site plan introduces a designated Electric Mobility Zone at the Joseph L. Bruno Rail Station. This zone occupies 9 existing parking spots from the deck and will accommodate 15 CDPHP *Cycle!* e-bikes supported by charging docks integrated with Skyhook Solar's six-panel canopy system. The combined footprint for the e-bike docks and canopy is approximately 40 feet by 6 feet.

Adjacent to this zone, the existing EV charging station will be expanded to accommodate two to four DRIVE vehicles. A new dual-port EV charger will be installed, building on the site's existing conduit capacity to minimize additional construction. The location is ideal for first/last mile connections given the station's role as a regional intermodal hub.

To promote secure charging and parking for privately owned micromobility devices, the plan includes the installation of approximately 10 Dero electric bike lockers positioned near the station's main entrance, measuring roughly 30.5 feet by 6 feet in total (see Figure 14). These lockers will provide tamper-resistant, user paid charging and storage infrastructure for individual micromobility owners.

Wayfinding improvements will include updated signage across the deck to mark key services: the Electric Mobility Zone, pickup/drop-off areas, and directions to adjacent CDTA services. Specific enhancements to existing Soofa signs, including relocation to better align with pedestrian flow, and updated digital content reflecting current services. These refinements aim to improve the visibility and accessibility of mobility options for passengers transitioning from rail to local transit and shared mobility services. In addition to the above plans for the Joseph L. Bruno Rail Station, Phase 1 also includes 11 additional e-bikeshare charging hub locations within the adjacent Albany service area of CDPHP *Cycle!* As mentioned previously, to build out a feasible pilot program of e-bikeshare charging infrastructure, there needs to be a handful of bikeshare hubs in addition to the Rail Station that are electrified. Since the Rail Station is located in close proximity to the Albany service area of CDPHP *Cycle!* It makes the most sense to start with the Albany service area for this pilot. The 11 additional e-bikeshare charging hubs in Albany are based on recommendations from CDPHP *Cycle!* staff for centrally located larger stations as well as their proximity to CDTA BusPlus stations and other CDTA services. These locations are detailed in Figure 15 and further explanation on these sites is provided in Appendix B.

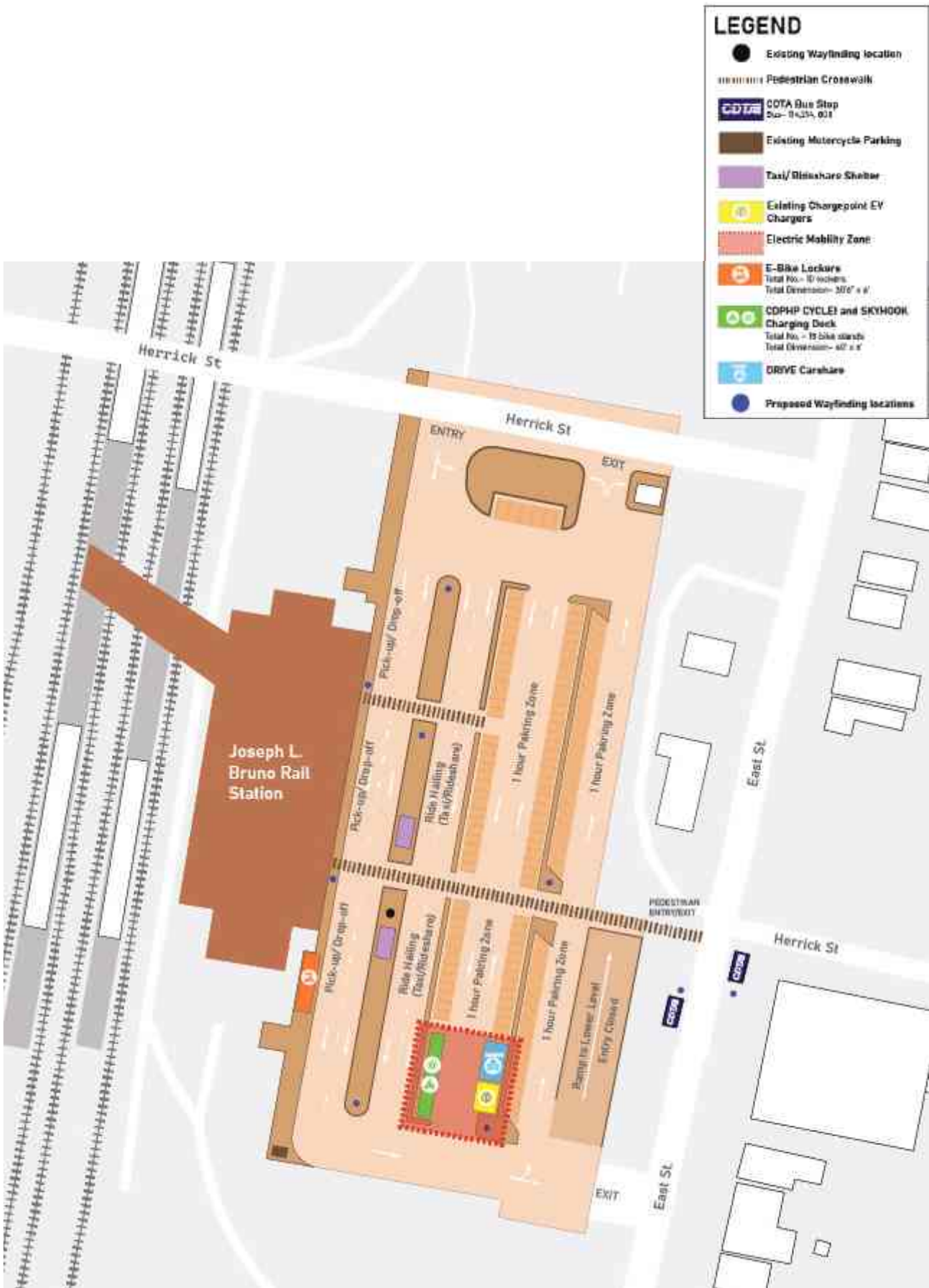


Figure 14: Site plan Phase 1

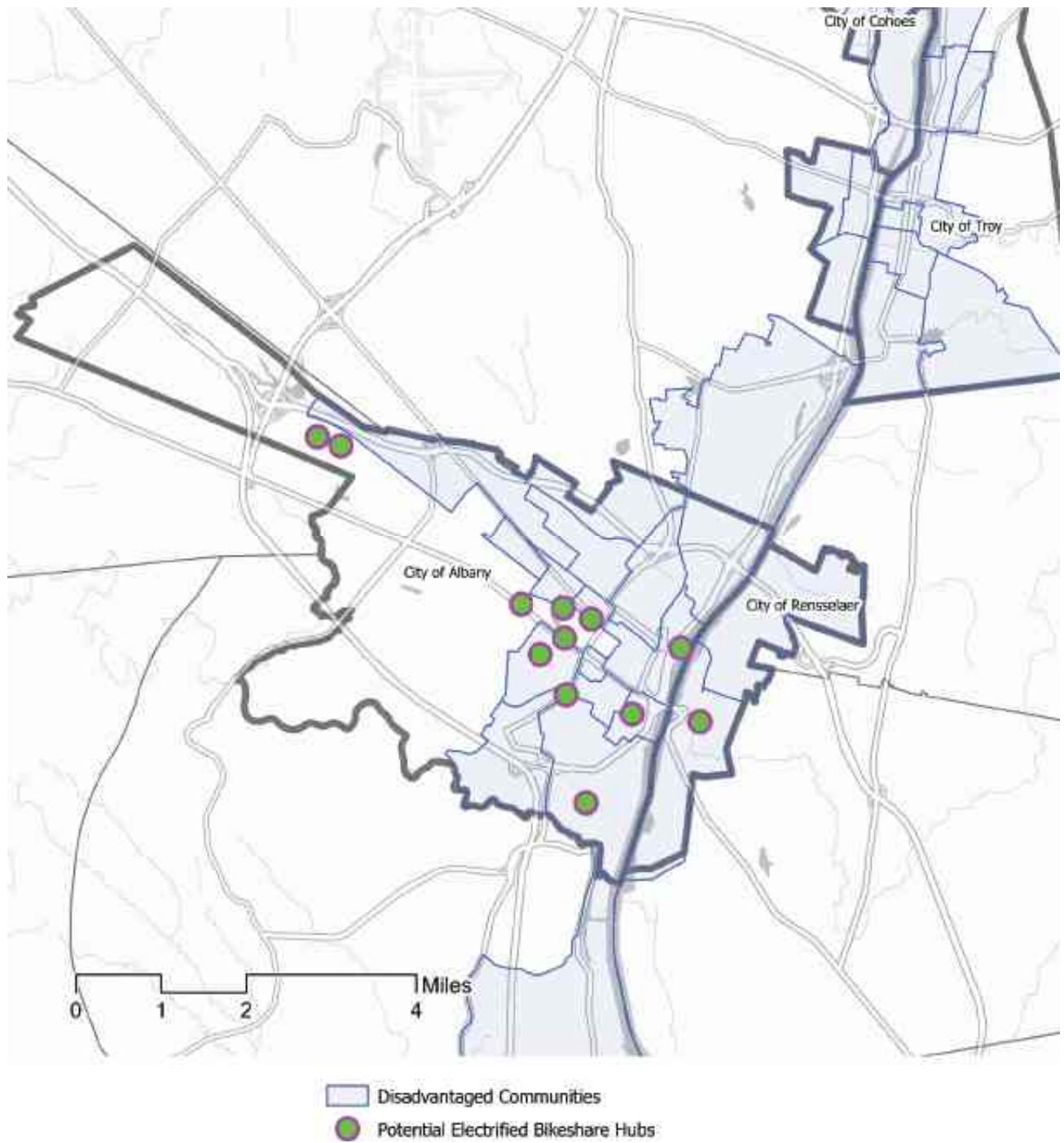


Figure 15: Phase 1 e-bikeshare charging infrastructure locations



Proposed Phase 2

Phase 2 of the site plan (Figure 16) explores future expansion opportunities for the Joseph L. Bruno Station site, contingent on land availability. Two development options are under consideration:

Option 1: If the adjacent June's Restaurant property is acquired, the expanded plot presents a high potential site for electric bus charging infrastructure. The plan envisions installation of pantograph chargers to serve up to six electric buses, with space reserved for a maintenance and operations room to support ongoing service needs. This addition would significantly enhance multimodal connectivity at the station while reinforcing CDTA's transition to a cleaner bus fleet.

Option 2: If the June's Restaurant property remains unavailable, the adjacent site which currently includes a portion of the deck with a non-operational ramp leading to a lower level parking garage could be infilled and leveled to create usable space. In this scenario, the reconfigured area may accommodate two electric bus charging bays; however, this setup would likely be less feasible for long term operational needs due to spatial constraints and limited maneuvering room for larger vehicles.

Phase 2 may also include a broader roll out for e-bikeshare charging infrastructure to more hubs throughout the various individual service areas of CDPHP *Cycle!* including Troy, Saratoga Springs, Watervliet, etc. This Phase 2 will take into account lessons learned from the Phase 1 rollout of e-bikeshare charging infrastructure in Albany and at the Joseph L. Bruno Rail Station. The Phase 2 rollout will involve a retrofit of the entire CDPHP *Cycle!* fleet.

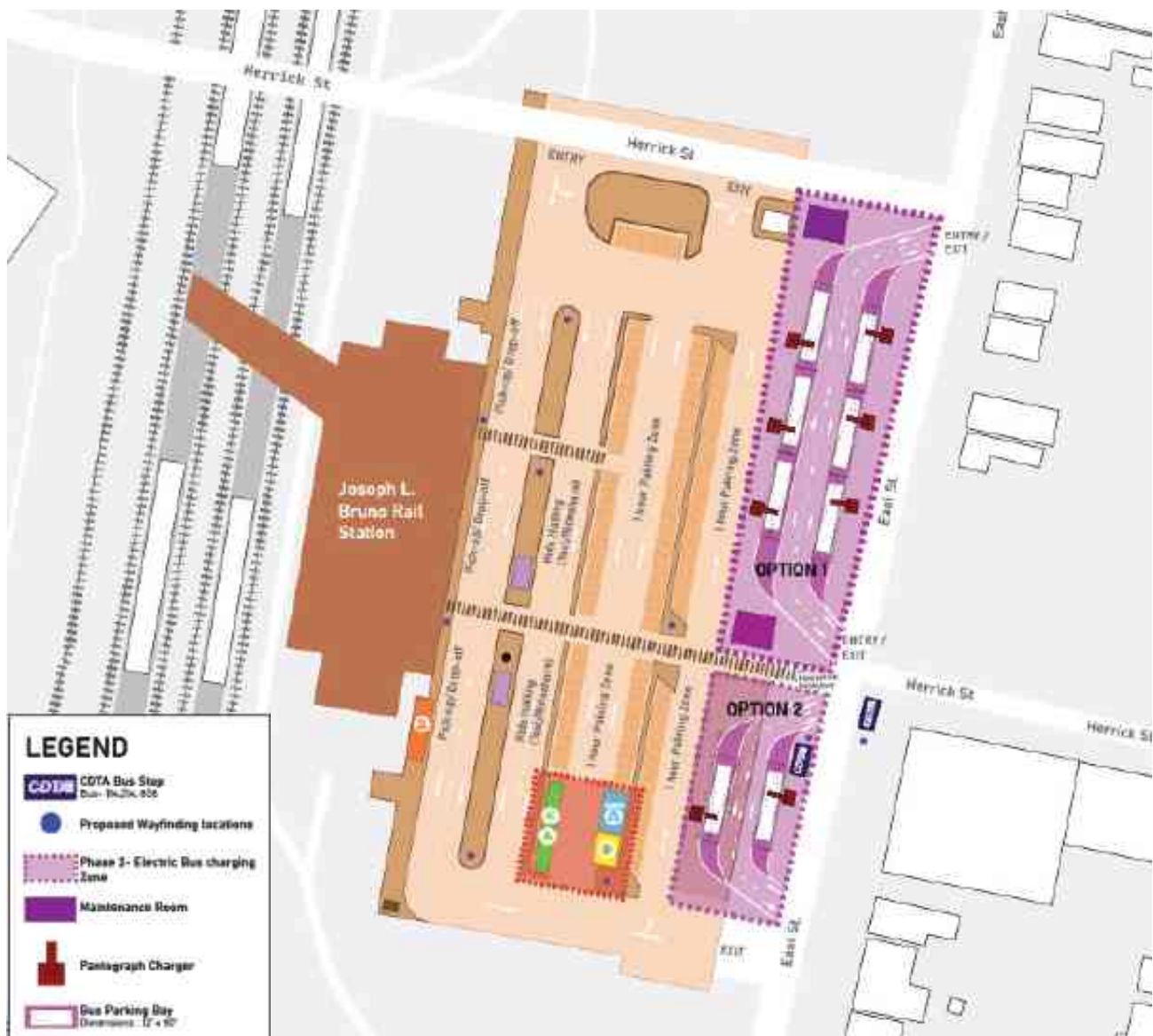


Figure 16: Site plan Phase 2



Sustainability

This plan builds upon the longrunning track record of CDTA in building financially sustainable shared mobility programming. CDTA's 15 year commitment to ownership of shared mobility programs should not be understated on how not only will CDTA further commit their resources, but will pursue future funding to advance this project for expansion and replication.

CDPHP *Cycle!* has been operating for over 9 years as a net gain financially for CDTA. The program generates recurring revenue from use, sponsorship from CDPHP, and contributions from municipal partners. Assets purchased through this project will be maintained as part of this existing program that has become a nationally recognized model of financially sustainable micromobility programming. The deployment of charging stations for CDPHP *Cycle!* is anticipated to increase operational efficiency and reduce operations costs significantly. Approximately 30-50% of operations cost for running electric micromobility programs is attributed to battery swaps. With the electric infrastructure installed in Albany, operational costs are likely to be reduced and therefore can save money in ongoing costs long past the program's three year timespan.

As with CDPHP *Cycle!*, DRIVE also has an established program and operation that this project builds upon. Since the 2023 relaunch of the program, there has been an average of 6-9 hours of use per day in the program's most active hubs. A major hurdle for program expansion has been infrastructure installments. The mobility hub location chosen as the focal point of this project is anticipated by DRIVE staff to see high utilization, therefore contributing to sustainability from recurring revenue.

Electric infrastructure for privately owned electric micromobility will see ongoing maintenance and other costs offset by the fees that users will eventually pay to use the system. Funding from the program will help cover the upfront costs of purchasing and installing the infrastructure. According to the manufacturer of these products Bikeep, it is typical for building owners to recoup their ongoing costs for product maintenance through user fees.

Adjustments to wayfinding and digital signs as well as the introduction of the Skyhook charging panel may provide opportunities for new surfaces for CDTA to sell in exchange for ad revenue. Savings in electricity due to solar charging and more energy efficient lighting will help CDTA to bring down ongoing electric costs.

CDTA may expect to see an increase in use across all their services at the Joseph L. Bruno Rail Station, due to the benefits to ridership seen when micromobility and transit options are co-located at rail stations (described further in the next section).

Following the existing ownership model whereby CDTA maintains charging infrastructure at the Joseph L. Bruno Rail Station is built into their budget as an agency, the additional electricity and infrastructure prospected in this project will be maintained within CDTA's operational budget.

Policy and Impact

Legal Analysis

As the longstanding owners of CDPHP *Cycle!* CDTA has strong relationships with municipal partners in the region, particularly in the Cities of Rensselaer and Albany where this plan proposes improvements.

The electrical upgrades and installation of electric charging infrastructure at the Joseph L. Bruno Rail Station may require approvals from the City of Rensselaer and National Grid. A licensed electrician who is certified to install Level 2 EV chargers will need to be hired to install the additional dual port EV charger and new outdoor electric lines for the e-bikeshare charging rack and the e-bike storage lockers. The EV charger installation must be compliant with the 2017 National Electrical Code (NEC) per New York State regulations.

For the installation of e-bikeshare charging racks at the satellite locations in the City of Albany, CDTA and its associated contractors for CDPHP *Cycle!* will need to work with the City to coordinate on construction. Since these types of installations are new, CDTA and the City will have to determine a mutually acceptable construction process. Given CDTA and the City's longstanding collaboration



with the CDPHP *Cycle!* program that includes providing public space for bikeshare hubs and waiving/coordinating on necessary permits, it is likely that coordination for installation of e-bikeshare charging racks should be a relatively straightforward process.

When it comes to laws governing the use of e-bikes, e-bikes are defined in New York Vehicle & Traffic Law § 102-c as “electric bicycles” with three distinct classes, two of which are legal in upstate NY. These are Class 1 e-bikes which are pedal assist only and go up to 20 miles per hour as well as class 2 e-bikes that are throttle controlled and go up to 20 miles per hour. Furthermore as of 2024 with the passage of Legislation S.154F/A.4938-D, New York State has been a nationwide leader in mandating that all e-bikes sold in the state comply with Underwriter Laboratories (UL) certification or equivalent safety standards.

Impacts Assessment

The CDTA Mobility Hub project will provide numerous positive impacts. Most directly these impacts are the increased connectivity of the Joseph L. Bruno Rail Station to downtown Albany and CDTA’s other mobility services. Additionally, the e-bike charging infrastructure improvements in the City of Albany that are proposed in this plan will increase the supply of available e-bikes throughout the city by bolstering operational efficiencies and adding increased e-bikeshare locations. These impacts will result in positive environmental impacts including significant reductions in projected greenhouse gas emissions as well as greater connectivity for DACs in and around Albany and the Capital Region. In addition to providing more mobility options to underserved populations in the region, the project could help boost tourism and economic growth in the Capital Region by adding more transportation links at one of the region’s key transportation connections to the rest of the state.

By making it easier and more convenient for people to choose zero-emission mobility for their everyday trips, this project will reduce greenhouse gas emissions from the transportation sector, which is one of New York State’s largest sources of climate pollution. This kind of shift is exactly what’s needed to help New York meet the ambitious targets laid out in the Climate Leadership and Community Protection Act (CLCPA), including cutting statewide emissions 40% by 2030 and achieving at least an 85% reduction by 2050. Expanding access to clean, shared mobility options not only provides individuals with affordable, practical alternatives to car ownership, it also builds the foundation for the broader systems change required to meet the state’s climate goals.

At the Joseph L. Bruno Rail Station, the quantified impacts of this project can be estimated based on the total Amtrak ridership embarking/disembarking at the station. The total annual Amtrak ridership is 889,048 people per year. It is estimated that 0.5-2% of rail customers will use micromobility or carshare to connect to their final destination from a rail station. 0.5% of 889,048 gives us 4445 annual customers that would use micromobility/carshare services at this site. Average micromobility trips are 1.5 miles while average carshare trips are 4 miles.²⁰ If we assume a 50/50 split of the 4,445 total annual customers between micromobility and carshare, this yields 3,372 miles for micromobility and 6,992 miles for carshare. As direct replacements of car trips which the Environmental Protection Agency (EPA) estimates 411 grams of CO₂ emissions per mile, there will be 1.39 metric tons of CO₂ reduced from micromobility customers and 3.7 metric tons of CO₂ redacted from the carshare customers which equals 5.09 metric tons of CO₂ reduced overall.

Another way to look at the GHG reduction implications of this project is to look at these impacts on a per vehicle basis. For bikeshare, we know that on a per bike basis, each new bike added to the CDPHP *Cycle!* system will result in 117 pounds of CO₂ redacted annually. For DRIVE, each new vehicle added to the system will result in 12702 pounds of CO₂ redacted annually. These percent of trips that replace personal automobile trips are based on existing trends for the CDPHP *Cycle!* and DRIVE Carshare programs.

Table 13 shows the projected reductions in greenhouse gas emissions per bikeshare and carshare vehicle added. The annual mileage per vehicle is based on averages from CDTA’s existing bikeshare and carshare programs. The percent of those trips that are replacing car trips is based on survey data from these programs. The pounds of CO₂ redacted per year is then calculated based on the EPA’s per mile car emissions figure.

20. California Air Resources Board

	Annual mileage per vehicle	Percent of trips that replace personal automobiles	Actual total of Annual Personal auto miles reduced	Car emissions per mile in grams (EPA)	Grams of CO2 Reduced	Pounds of CO2 Reduced
Bikeshare	431	30%	129.3	411	53142	117
Carshare	20000	70%	14000	411	5754000	12702

Table 13: Bikeshare and carshare greenhouse emissions reductions

As shown in Table 14, there is also the emissions reduction due to the introduction of charging stations for e-bikeshare. With the reduced need to transport charged batteries due to the bikeshare charging stations, there is anticipated to be an emission reduction of 3002 pounds of CO2. This is based on an average daily mileage of 20 miles per day during the CDPHP *Cycle!* bikeshare season which lasts 260 days. Based on projections from e-bike charging provider re:Charge, 50% of operations vehicle trips will be reduced when e-bikes are charging at bikeshare stations.

	Annual mileage per vehicle	Percent reduction in mileage due to bikes charging on-site	Actual total of Redistribution Vehicle annual miles with e-bike charging stations	Light Duty emissions per mile in grams (EPA)	Grams of CO2 Reduced	Pounds of CO2 Reduced
CDPHP Cycle! Redistribution Vehicle	5200	50%	2600	523	1359800	3002

Table 14: Projected annual CO₂ reductions from CDPHP Cycle! redistribution vehicles with on-site e-bike charging

As far as the personally owned micromobility storage solutions proposed here, there is emerging evidence that adding in secure bike parking at rail stations can drastically increase the number of people who travel to/from a rail station by bicycle. In the Netherlands, Dutch Railways has reported that their efforts to add in secure bike parking at rail stations has resulted in people being over twice as likely to bike to/from their train connection.²¹ Closer to home in Washington DC from 2009-2019 there was a secure bike storage solution that accommodated 150 bikes right outside of Union Station. A third of users of the DC bike storage facility report that before the facility existed they used to drive to the station.²² There is little research on the mode shift/ greenhouse gas emissions reductions of installing bike storage facilities specifically designed to serve e-bikes and other electric micromobility – this will be a key item monitored and researched through CDTA's Mobility Hub project.

Another key impact of this project will be its demonstration of electric micromobility charging technology both for personal use and the CDPHP *Cycle!* fleet. Electric micromobility charging for personal use may help to show others in the region whether they be government institutions, employers, affordable housing developers, etc. a blueprint for safely charging these devices outside of buildings. For the CDPHP *Cycle!* program, electric charging stations can help to reduce the operational burden on maintenance staff. This will help to reduce costs in the long run, savings that could be passed on to customers and/or go back into the system to further support the program's long-term financial sustainability.

21. Zipper, D. (2023, April 20). How the Dutch mastered bike parking at train stations. CityLab. Bloomberg <https://www.bloomberg.com/news/articles/2023-04-20/how-the-dutch-investment-in-bike-parking-paid-off>

22. National Public Radio. (2009, September 2). D.C. bike shelter gives commuters a ticket to ride [Transcript]. NPR. <https://www.npr.org/transcripts/112449158?>



Conclusion

The plan outlines an actionable vision for advancing zero-emission, multimodal transportation across New York's Capital Region that meets the needs of DAC residents. By centering equity, sustainability, and operational efficiency, this initiative positions CDTA to lead in the development of next-generation mobility hubs and an expanded bikeshare program supported by electric charging infrastructure that meet the needs of underserved communities while aligning with statewide climate goals.

The Joseph L. Bruno Rail Station, selected as the plan's primary demonstration site, offers an unparalleled opportunity to pilot an integrated electric mobility hub that combines carshare, bikeshare, micromobility charging, and enhanced wayfinding. CDTA's ownership of the site, visionary leadership amongst transit agencies that operate shared mobility, and its existing infrastructure and regional connectivity, makes it uniquely suited for a scalable and impactful deployment. The satellite electric charging infrastructure network for bikeshare will help lay the groundwork for broader electrification and expansion of bikeshare in conjunction with future mobility hub initiatives.

The planning process, grounded in community engagement, technical feasibility, and market analysis, presented a clear path forward for both implementation and expansion. CDTA has already laid the groundwork in establishing sustainable carshare and bikeshare programs in the region, this plan presents a blueprint for evolving these programs through expanding electric charging infrastructure that supports the continued growth of these programs as they scale to further meet the needs of DAC residents in Albany, Rensselaer, and throughout the region.

With a proven track record in shared mobility and a strong foundation of regional partnerships, CDTA is well-positioned to implement this plan and catalyze meaningful shifts in how Capital Region residents and visitors access transportation. The result will be a cleaner, more connected, and more equitable mobility network that advances New York's climate and transportation equity goals.



Appendix A

Survey Questionnaire and Responses

The following is the full set of survey questions that were used during community engagement efforts to gather input from CDTA customers across the Capital District. The survey was publicly available online during April and May of 2025. The survey was advertised to CDTA customers through email marketing, social media advertising, flyers, and in the bikeshare app.

CDTA Clean Mobility Survey

The Capital District Transportation Authority (CDTA), in collaboration with Shared Mobility Inc. (SMI), is conducting a Clean Mobility Survey to better understand how people move throughout the Capital District. As part of this effort, we're inviting users of CDTA services whether it's bus customers, bike share users, or on-demand transit customers to share their experiences and ideas for improving how different mobility options work together.

Your input will help us explore how people currently use CDTA services and guide future improvements, especially around the integration of electric bikes, micromobility, carshare, and other transportation options.

This survey takes only a minute to complete, and your responses will directly support efforts to build a more seamless, accessible, and connected transportation network in the Capital District.

Thank you for participating!

1. Please enter the ZIP code where you live
2. Which of the following best describes your access to a car or personal vehicle?
 - a. I own or have regular access to a vehicle
 - b. Sometimes / Shared access (I share with someone or have access only occasionally)
 - c. I do not have access to a vehicle
 - d. I don't know how to drive
3. How often do you use CDTA services (for e.g.: CDTA Bus, Bus Plus: red, blue or purple line, or FLEX On Demand) for commuting or daily travel?
 - a. Daily
 - b. A few times a week
 - c. A few times a month
 - d. Less than once a month
 - e. Never
4. Have you ever charged an electric mobility device before? (select all that apply)
 - a. E-bikes
 - b. Electric cars
 - c. E-scooters
 - d. Mobility Scooters / Power Wheelchair
 - e. I have never charged an electric mobility device
 - f. Other:
5. Which CDTA services have you used? (Select all that apply)
 - a. CDPHP Cycle! bike share
 - b. CDTA Bus or BusPlus
 - c. FLEX On-Demand
 - d. DRIVE Carshare program
 - e. I haven't used but have heard of these
 - f. Neither heard nor used these services
6. What additional amenities/services would you find useful at larger CDTA bus stops and CDTA facilities such as the Joseph L. Bruno Rail Station in Rensselaer? (Select all that apply)

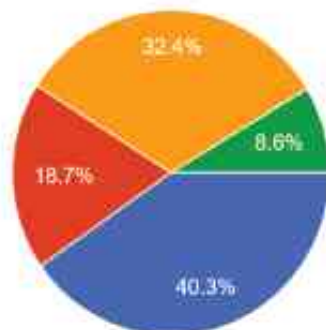


- a. Wayfinding and navigation signage
 - b. Improved access to CDPHP Cycle! bikeshare
 - c. Improved access to DRIVE Car Share
 - d. Secure e-bike charging/storage
 - e. Electric Vehicle charging station
 - f. Other :
7. Which of the following CDTA bus stops/facilities did you have in mind while answering the previous question, question 6? (Select all that apply)
- a. Joseph L. Bruno Rail Station in Rensselaer
 - b. Morton Station (S. Pearl St & Morton Ave, Albany)
 - c. Riverfront Station (River St & Front St, Troy)
 - d. Other :
8. How familiar are you with e-bikes (electric bicycles)?
- a. I own an e-bike
 - b. I've used CDPHP Cycle's e-bikes
 - c. I've heard of e-bikes but never used one
 - d. I've never heard of e-bikes
 - e. Other:
9. How much would you consider paying to purchase an e-bike out of pocket? (in \$)

Survey responses

2. Which of the following best describes your access to a car or personal vehicle?

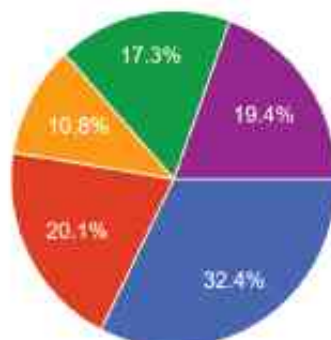
139 responses



- I own or have regular access to a vehicle
- Sometimes / Shared access (I share with someone or have access only occasionally)
- I do not have access to a vehicle
- I don't know how to drive

3. How often do you use CDTA services (for e.g.: CDTA Bus, Bus Plus: red, blue or purple line, or FLEX On Demand) for commuting or daily travel?

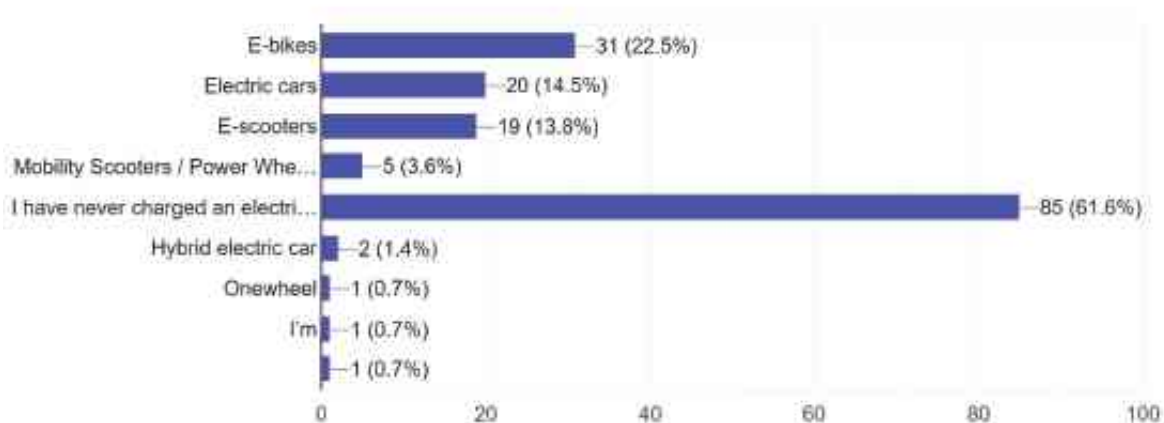
139 responses



- Daily
- A few times a week
- A few times a month
- Less than once a month
- Never

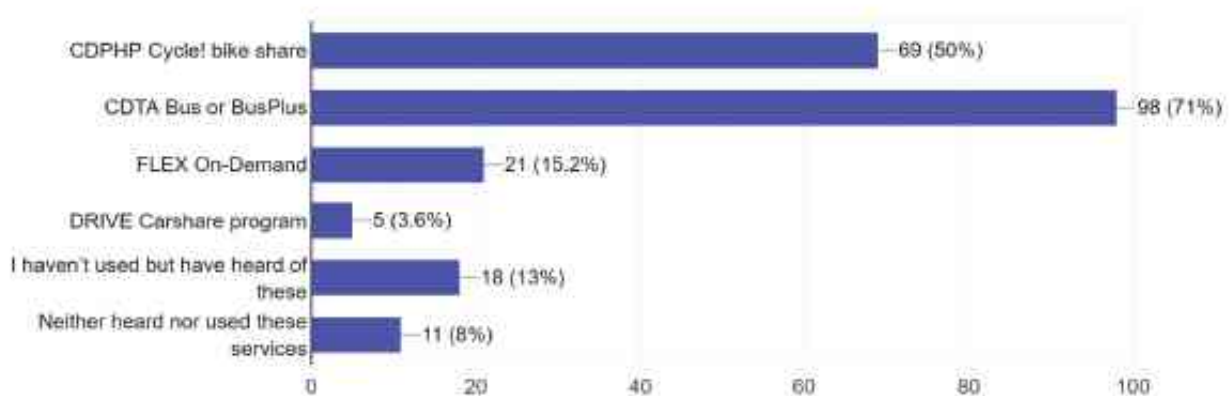
4. Have you ever charged an electric mobility device before? (select all that apply)

138 responses



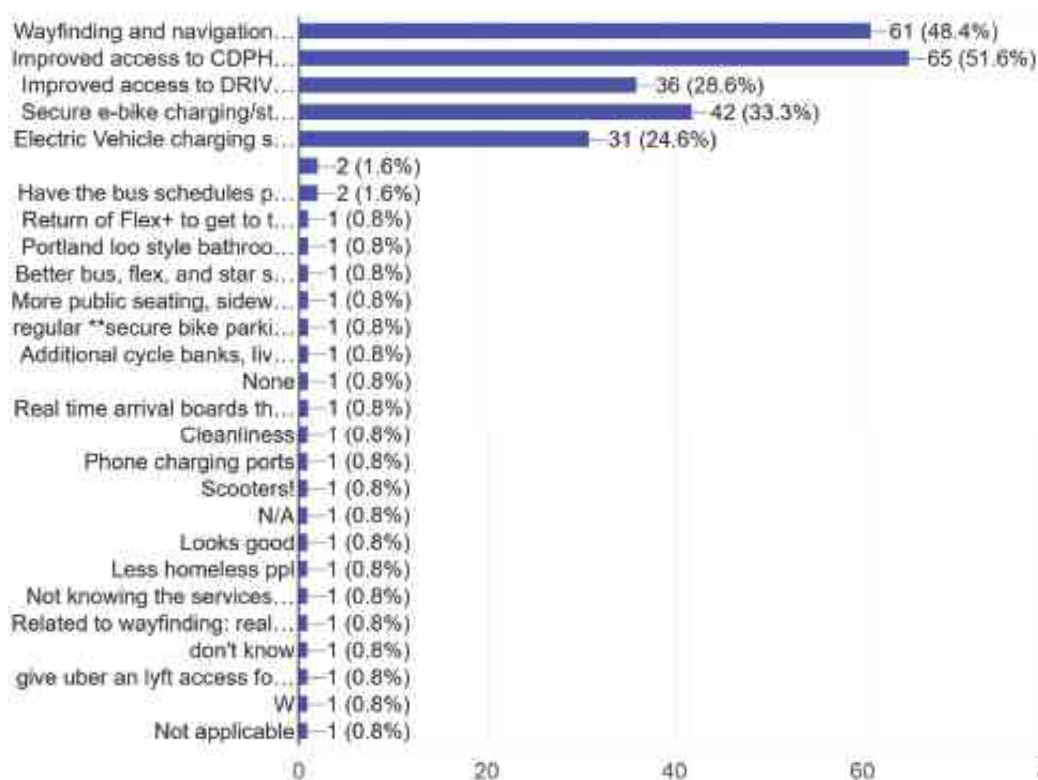
5. Which CDTA services have you used? (Select all that apply)

138 responses



6. What additional amenities/services would you find useful at larger CDTA bus stops and CDTA facilities such as the Joseph L. Bruno Rail Station in Rensselaer? (Select all that apply)

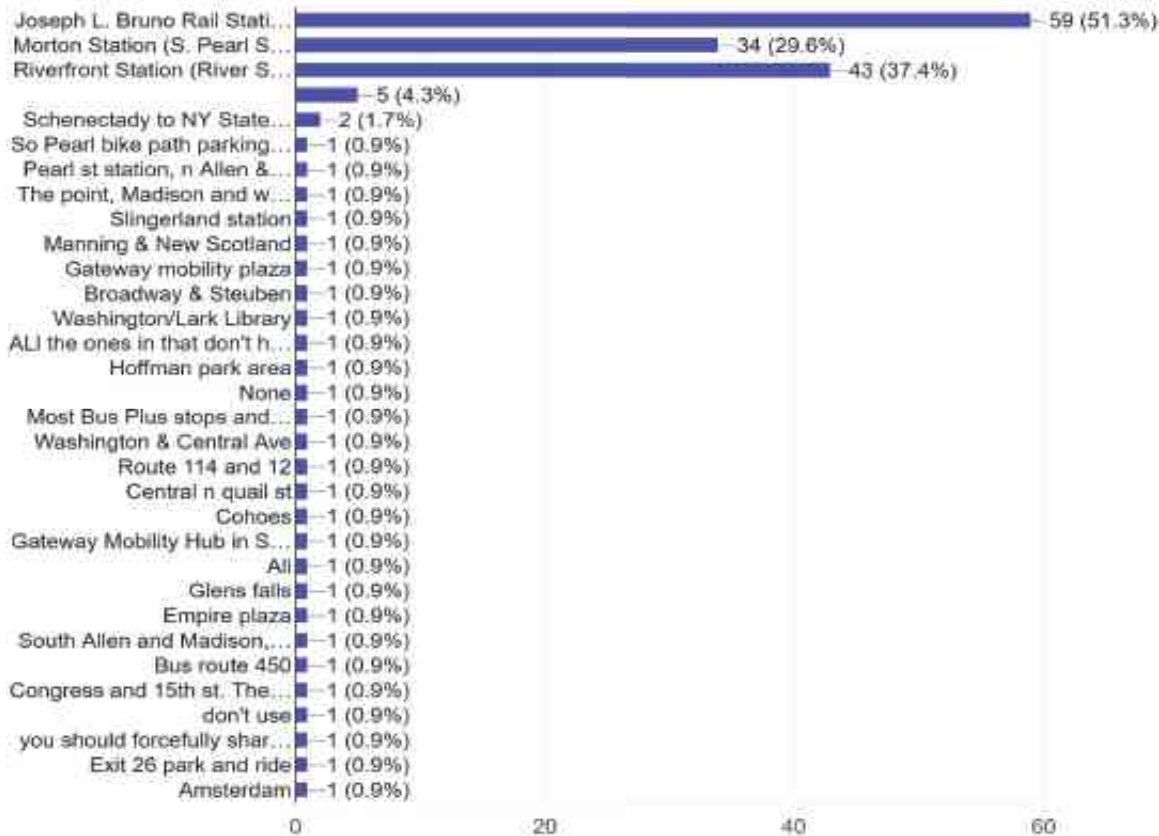
126 responses





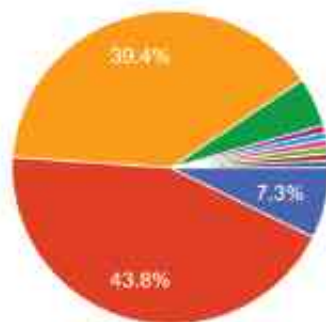
7. Which of the following CDTA bus stops/facilities did you have in mind while answering the previous question, question 6? (Select all that apply)

115 responses



8. How familiar are you with e-bikes (electric bicycles)?

137 responses



- I own an e-bike
- I've used CDPHP Cycle's e-bikes
- I've heard of e-bikes but never used one
- I've never heard of e-bikes
- I've tried an e-bike at a bike shop.
- My friends and I all use CDPHP bikes...
- My family has e-bikes but I've only rid...
- My partner owns an ebike and I have t...

1/2

Community Engagement Summary

TO: Rachel Fishman, Program Manager, NYSDOT
FROM: Tyler Madell, Program Director, Shared Mobility, Inc.
DATE: 06/11/2025
RE: **Community Engagement Summary, CDTA Clean Mobility Planning Project**

This memo outlines the key findings and reflections from the community engagement activities conducted to support the CDTA Clean Mobility Planning Project, funded under NYSDOT's Clean Mobility Planning initiative. The purpose of these activities was to gather qualitative and quantitative data to better understand travel behaviors, barriers to access, and opportunities to enhance multimodal mobility across the Capital Region.

The engagement process included three primary components: an online public survey, in-person conversations with CDTA customers at key transit facilities, and stakeholder meetings.

1. Online Public Survey

To ensure broad regional input, a digital survey was circulated throughout the CDTA service area and shared via CDTA channels, social media, and community partners. The survey received **144 responses** from participants across **50 zip codes**, including 27 within New York's Capital Region comprising Albany, Rensselaer, Schenectady, and Saratoga counties. **Notably, 20 of these zip codes are designated as Disadvantaged Communities (DACs)** by New York State, helping ensure that voices from historically underserved and mobility-challenged neighborhoods were meaningfully represented. Feedback from these areas provided critical perspectives on transit accessibility, affordability, and awareness of shared mobility options.

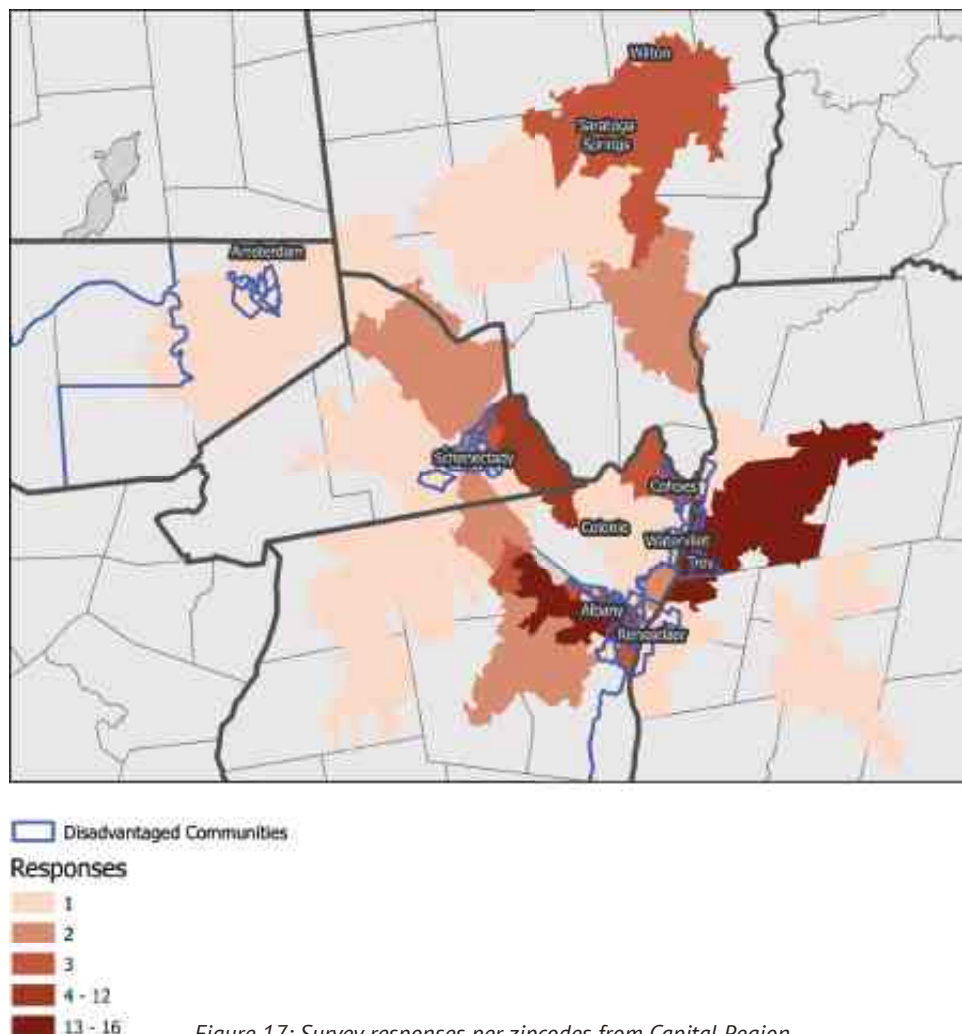


Figure 17: Survey responses per zipcodes from Capital Region



The survey revealed important patterns in mobility access:

- 32% of respondents reported having no access to a personal vehicle, and an additional 9% stated they do not know how to drive, underscoring the critical importance of transit and shared mobility in meeting daily needs.

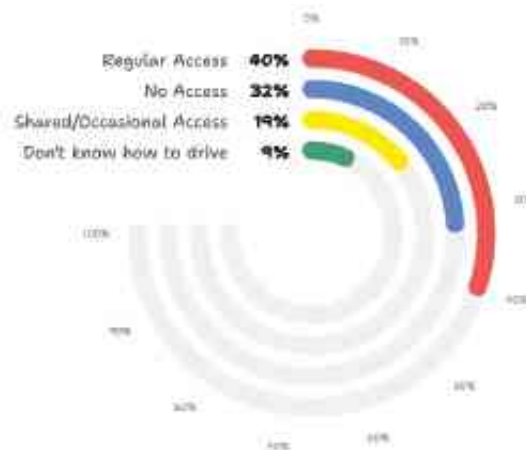


Figure 18: Survey responses on access to a personal vehicle

- While 32% of respondents use CDTA services daily, another 20% use them a few times a week. A total of 29% use the services less frequently, either a few times a month or less than once a month, while nearly 19% never use them, often citing limited coverage or lack of awareness.

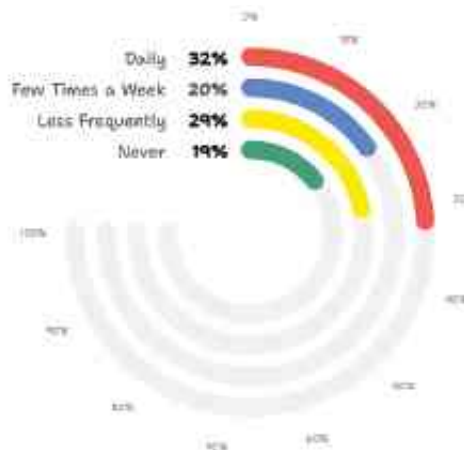


Figure 19: Frequency of CDTA service usage among survey respondents.

- Most respondents were familiar with e-bikes, though many had never tried one. Around 41% had heard of e-bikes but never used them. Interestingly, the same proportion of survey takers had used CDPHP Cycle, CDTA's bikeshare service. While only a small number had never heard of e-bikes or used them elsewhere, this split highlights both the existing awareness and the untapped potential to grow micromobility access and education

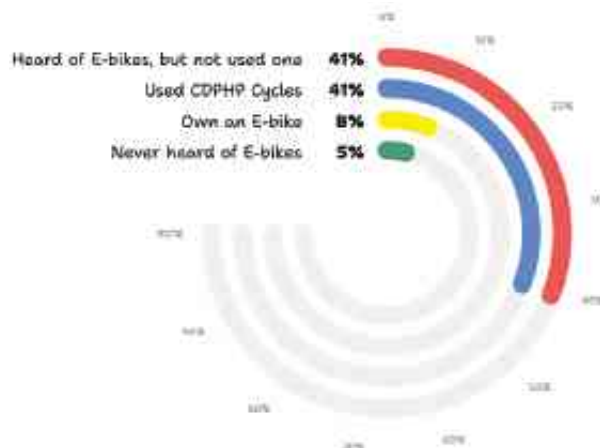


Figure 20: Familiarity and experience with e-bikes among survey respondents.

When asked about desired amenities at major CDTA transit locations, the most frequently requested features included:

- Improved wayfinding and navigation signage
- Real-time transit updates
- Access to bike share services like CDPHP Cycle
- Secure micromobility charging and storage
- Electric vehicle (EV) charging stations

These responses provide a clear picture of where investments in infrastructure, signage, and outreach could help build more seamless and equitable transportation options.

2. In-Person Community Conversations

Our team conducted on-site engagement at the Joseph L. Bruno Rail Station in Rensselaer, and Bus stops in Downtown Albany, speaking with a mix of daily CDTA commuters and first-time visitors. These conversations provided meaningful insight into how CDTA services are currently used and where there may be opportunities to improve the customer experience when it comes to improved connectivity at mobility hubs and major bus stops. Several customers reflected on the former Flex Plus service, which had offered a low-cost connection to downtown Albany. While the service is no longer active, these conversations surfaced valuable feedback on the continued need for affordable, flexible first/last-mile options.

“I’m a PhD student and used to rely on the Flex bus to get to the station. Now I have to plan to arrive much earlier than needed because I can’t depend on CDTA buses to be on time or more frequent maybe.”

“Flex was the only service that actually worked for me. It got me where I needed to go at a price I could afford. Ever since it stopped, things have been a lot harder. Now I either wait a long time for the bus or spend money on an Uber.”

Wayfinding and station navigation emerged as another key theme, particularly from travelers unfamiliar with the area. These experiences point to an opportunity to strengthen on-site information and directional signage, especially for connecting services.

“I’m visiting from the West Coast, and I had no idea where to go once I got off the train. There’s nothing that tells you where the exit of the station is or whether there is a bus stop, or any other services.”
— New traveler at the Rail Station

Several customers pointed to a lack of biking infrastructure and bikeshare availability around the Rail Station as a barrier to short-distance travel. These comments suggest a clear opportunity to explore bikeshare expansion at key transfer points.

“I study here in Albany and often use the CDPHP Cycle on my campus, but I can’t use it in this area because there’s no infrastructure. Without bikeshare nearby, I end up relying on friends for rides or spending on Uber, which gets expensive.”

Several customers noted the potential to enhance amenities at transit stops, including features like charging ports, Wi-Fi, and printed maps. Real-time service information was mentioned repeatedly as something that could make the system easier to navigate—particularly during unexpected delays.

“If I miss one bus, I have no idea how long I’ll be waiting. It would help to have screens or even a map telling me where I am and what’s next.”

At a downtown Albany bus stop, Technology access was also raised in the context of real-time updates. Customers expressed interest in options for getting route information even when phone data or Wi-Fi access is limited—suggesting the potential value of on-site displays or printed materials to support transit-dependent customers.

“If there was a screen or map at the stop that showed when buses are coming or where they connect,



that would make a big difference. I don't have a full data plan, so if there's no Wi-Fi nearby, I'm stuck guessing. Sometimes I just walk to the stop and hope the bus is running. Even printed maps would help."

As part of the engagement, we also asked customers about their awareness of other mobility services offered by

CDTA, including Drive Carshare. While some were familiar, several individuals shared that they were unaware such a service existed. For customers who regularly rely on the bus or CDPHP Cycle! bikes to get around, the idea of affordable short-term car access was both surprising and appealing.

"I usually use the bus or those green bikes (CDPHP bikes) to get around. I don't own a car. I didn't even know they (CDTA) had a carshare program. If I'd known I could just rent a car for a few hours, I'd have planned my trips differently. That would really help for grocery runs or getting to places that aren't on a bus line."

These conversations reinforce the value of improving first/last-mile connectivity, expanding access to real-time service information, and making shared mobility options like bikeshare and carshare more visible and intuitive. Together, these insights point toward low-barrier improvements that could make CDTA's system more inclusive, flexible, and responsive to the daily needs of customers, especially those who rely on it most.

3. Stakeholder Groups Meeting Summaries

3.1 CDPHP Cycle!

On Monday May 19th, 2025 we met with Steve Bratspis, the Operations and Logistics Manager from CDPHP Cycle! to discuss opportunities to enhance bikeshare infrastructure at key mobility nodes across the region. CDPHP Cycle! is a regional bikeshare system in partnership with CDTA, providing access to shared bicycles across Albany, Schenectady, Troy, and Saratoga Springs. The conversation focused on system visibility, emerging infrastructure needs, and the importance of extending service reach to support more equitable, multimodal access.

A key theme of the discussion was the growing relevance of e-bike charging infrastructure not just for the CDPHP Cycle! fleet, but for the increasing number of people using personally owned e-bikes. Steve noted that e-bike usage has become more common throughout the region, and that installing public charging stations could make cycling more convenient, safer, and viable as a daily transportation option. Sites like SUNY Albany and Riverfront Station were identified as potential locations for piloting this infrastructure, particularly in areas where active transportation is already strong. Incorporating charging options at mobility hubs was seen as a step toward supporting long-term mode shift and healthier, low-emission communities.

Steve also mentioned Joseph L. Bruno Rail Station, where CDPHP Cycle! does not currently have a bikeshare dock. He shared that customers frequently ride CDPHP bikes to the station and lock them nearby, requiring the bikeshare operations team to retrieve them manually. This existing pattern suggests unmet demand and an opportunity to install dedicated infrastructure at the station. Doing so would help address an existing operational gap while supporting customers who are already using bikeshare as part of their train-to-city connection.

The Morton Avenue Bus Stop was highlighted as another key location for potential expansion. The site currently includes Drive Carshare and EV charging, but lacks bikeshare access. Adding a station here would support integrated mobility planning, particularly for first/last-mile travel. He agreed that pairing bikeshare with existing mobility services like transit, carshare, and EV charging can create more seamless, intuitive travel options for customers, especially in areas that already serve as informal hubs.

Finally, the conversation addressed the role of visibility and wayfinding in increasing bikeshare usage. Steve noted that some stations may be underutilized simply because people do not know they are there. Enhancing signage, on-site branding, and directional markings at key locations particularly in multimodal zones could help boost ridership and ensure bikeshare is a visible



and intuitive option for more customers.

3.2 DRIVE Carshare

On Tuesday May 20th, 2025, the team met with Creighton Randall, CEO and Principal Consultant at Mobility Development, to discuss opportunities to strengthen Drive Carshare, an EV carsharing service operated in partnership with CDTA. Drive Carshare currently provides access to shared EVs across several locations in the Capital Region, including mobility hubs, park-and-ride lots, and transit-adjacent areas.

The conversation took place during a visit to the existing Mobility Hub in Liberty Square, where Drive Carshare is currently co-located with CDPHP Cycle! bikeshare and CDTA bus service demonstrating the kind of integrated, multimodal access that supports first/last-mile connectivity. Creighton emphasized that this co-location model is working well, particularly in areas where EV charging stations already exist but remain underutilized. These sites may be well suited for carshare expansion, especially as Drive continues to grow its electric fleet.

Creighton noted that electric carshare is proving useful for customers who do not own a personal vehicle but need occasional access to one. However, he also acknowledged that there is significant room to improve public awareness and education. Increasing visibility through signage, physical branding, and digital integration with other mobility platforms could help broaden use among transit customers, bikeshare customers, and others who may benefit from occasional vehicle access but do not yet know carshare exists.

The conversation also highlighted opportunities to expand Drive Carshare to additional first/last-mile nodes, especially locations like the Joseph L. Bruno Rail Station in Rensselaer, where customers often face a gap between arriving by train and finding a flexible way to complete their journey. By placing carshare directly at such nodes. This model also supports park-and-ride functionality, giving customers the ability to return and drop off the vehicle at a known mobility hub with available EV charging.

Together, these insights suggest that Drive Carshare has the potential to play a growing role in a more connected, zero-emission transportation network especially when strategically layered alongside bikeshare, transit, and existing EV infrastructure.

3.3 Capital Streets

On Tuesday May 20th, 2025 we sat down with James Rath the Executive Director of Capital Streets to get his group's input on this mobility plan. Capital Streets is a transportation advocacy organization based in New York's Capital Region, focused on creating safe, equitable, and sustainable mobility options for all residents. Their work centers around improving access to biking, walking, and public transit, while reducing car dependency. Through policy advocacy, community engagement, and on-the-ground initiatives, Capital Streets pushes for infrastructure improvements and legislative action that promote active transportation and social equity.

When it comes to improved e-bike charging infrastructure and bike parking, Capital Streets saw opportunities to improve these aspects in and around major employment centers in downtown Albany. They have been actively advocating for improved accessibility around the New York State Capitol and the Legislative Office Building, emphasizing that these spaces should serve people from all walks of life. Many of these individuals want to bike or take public transit, but are hindered by inadequate facilities, such as the lack of secure indoor bike parking at the Capitol. While the Department of Environmental Conservation (DEC) building has some indoor bike parking, challenges remain at other key locations such as the Joseph L. Bruno Rail Station, where secure parking and bike lockers are limited.

James also sees opportunities to add in secure bike parking and e-bikeshare at the Joseph L. Bruno Rail Station to improve connectivity to the site. He said that he would never consider leaving his bike at the Joseph L. Bruno Rail Station when taking the train out of town. But if there was secure bike parking, he could see himself and others using this parking when taking a train out of town for several days.



In Troy, the Riverfront Station area has insufficient bike infrastructure for on-road biking facilities and in terms of bike parking there is only one bike rack on 4th Street and limited secure storage. Capital Streets sees opportunities to improve this, especially near high-traffic areas like the Troy Atrium, farmers markets, and social service hubs such as Joseph's House and Unity House. Bike lockers and secure parking in these zones could enhance access for residents who rely on biking to connect with carshare services or public resources. There's also potential to make better use of public space, like the underutilized right-of-way at Riverfront Park, which could support both mobility improvements and amenities like charging stations for e-bikes and phones. E-bikes are increasingly popular in the region, yet infrastructure and policy have not caught up. James, expressed interest in expanding programs such as e-bike rebates, similar to those implemented in other parts of the country.

Beyond infrastructure, Capital Streets recognizes the importance of education and outreach particularly around carshare programs, which are underutilized despite their potential to help families reduce vehicle dependence and save money. Better marketing, storytelling, and a strategic expansion into locations near social services could strengthen the impact of these programs. Similarly, enhancing regional wayfinding and connectivity especially between cities like Albany and Troy could make biking a more viable everyday option. As Capital Streets continues its work with partners like the Capital Region Transportation Council (CRTC) on initiatives like Vision Zero and intersection redesigns, their goal remains clear: to build a transportation system that works for everyone.

3.4 Capital Region Transportation Council

On Wednesday May 28th, we met with representatives from the region's MPO, the Capital Region Transportation Council (CRTC) to discuss the project and get their feedback on the mobility improvements being considered. Attending the meeting from CRTC were Sandy Misiewicz (Executive Director), Adam McCarvill (Transportation Planner), and Ethan Townsend (Transportation Planner).

During the discussion with the Capital Region Transportation Council (CRTC), they expressed broad alignment between the proposed mobility hub improvements and their current long-range planning efforts. The ideas being brought forward by this project, particularly around personal and shared micromobility charging infrastructure and expanded carshare access, were well received. The feedback was largely framed around the unique opportunities and challenges at three priority sites: the Joseph L. Bruno Rail Station in Rensselaer, Morton Station in Albany, and Riverfront Station in Troy.

The Joseph L. Bruno Rail Station in Rensselaer remains a critical site for addressing first and last mile transportation challenges. CRTC emphasized the need for improved signage and wayfinding as it relates to nearby points of interest and navigability, especially to connect the station across the Hudson River into Albany via the future bike/ped path on the Livingston Avenue Bridge. The redesigned bike-ped path on this bridge is expected to be operational by 2027, significantly enhancing bike access to the station.

Bike lockers were identified as a valuable amenity here. Real-time transit information and bus connections are also crucial, as customers at this hub would benefit from knowing when the next service is arriving. The Morton Station site in Albany was seen as strategically sound, though CRTC advised monitoring potential changes in tenancy, as Albany County may be relocating its services to the Saint Rose campus. Despite this uncertainty, Morton Station still presents an opportunity for mobility infrastructure investment.

CRTC highlighted that the City of Albany is currently initiating a feasibility study on building out an electric mobility infrastructure network. The city has secured funding for 14 EV chargers and is prioritizing implementation in residential neighborhoods including Center Square. CRTC suggested that Morton Station could naturally align with this broader citywide initiative. More broadly, co-location of transit, carshare, and micromobility services at key sites like Morton was strongly encouraged, especially where wayfinding and accessibility enhancements can help integrate active transportation options more fluidly.

Riverfront Station in Troy is viewed as an especially promising site due to its central location and ongoing redevelopment. A major apartment complex has recently been announced for the area once occupied by a parking garage, and CRTC sees opportunity for integrating electric mobility infrastructure into the development, especially given past plans for bike improvements in this district. While it is anticipated the new development may include affordable housing, the exact details remain uncertain. CRTC also referenced ongoing efforts in Troy, including a citywide Bike Facilities Study and the Waterfront Trail project. The site's proximity



to both downtown amenities and residential areas makes it a key candidate for secure bike parking, micromobility charging, and carshare expansion.

Cross-Cutting Considerations- Across all sites, CRTC stressed the importance of real-time transit information and intuitive, accessible design. Customers increasingly expect up-to-date information about bus arrivals, and CRTC suggested physical ticketing and information kiosks at larger bus hubs to enhance convenience especially for customers who find the CDTA app challenging. The CRTC also noted CDTA's ongoing work to improve accessibility for deaf and blind customers, which should be considered when designing future hubs. Additionally, CRTC noted that CDTA facilities would be a strategic site for charging infrastructure that not only accommodates e-bikes and e-cars, but also electric wheelchairs.

CRTC noted that incorporation of e-bike/micromobility charging for personally owned vehicles could have the added benefit of providing a basis for replicating these solutions at other sites around the region. Developers who are increasingly concerned about e-bikes charging indoors, may look to this project and potential demonstration of outdoor charging solutions as something to consider for future developments in the region.

Conclusion

This engagement process surfaced actionable insights from CDTA customers, community members, and mobility stakeholders. Through a combination of surveys, in-person conversations, and planning meetings, participants shared lived experiences, identified opportunities to improve service and infrastructure, and offered suggestions to enhance how people move across the region, particularly those without regular access to personal vehicles. Recurring themes included the importance of clearer wayfinding, the value of real-time transit updates, and strong interest in expanding bikeshare, carshare, and multimodal amenities at key locations.

At the Joseph L. Bruno Rail Station, community feedback highlighted a strong opportunity to enhance multimodal connectivity by integrating CDTA's existing programs such as CDPHP Cycle! and Drive Carshare. Participants pointed to ways in which added infrastructure and clearer information could improve access to downtown Albany and nearby destinations. Adding bikeshare docks, secure bike parking, carshare access, and real-time service displays at the station would help position it as a well-connected mobility hub, supporting seamless travel and offering more flexible, low-emission options for a broader range of customers. As implementation pathways are explored, the Joseph L. Bruno Rail Station could serve as a model for replicable, low-emission mobility hubs across the region. These engagement takeaways offer a people-centered foundation for future planning efforts aligning directly with New York State's broader goals for equitable, clean transportation infrastructure.



Appendix B

CDTA SCOOT Pilot Report



CDTA SCOOT - Final Report

CDTA Scooter Pop-Up Trial Report

Dates: October 4, 2024 – October 27, 2024

Locations: Albany, Troy, Schenectady, Saratoga Springs





Introduction

This report provides a comprehensive review of the recent four-weekend scooter pop-up trial conducted in the Capital Region of New York, managed by the Drop team in partnership with CDTA. Aimed at assessing community interest and testing operational systems, the trial introduced 25 scooters to four cities across multiple weekends. The results reveal promising opportunities for expanding micromobility options in the area.

Overview of the Trial

- **Duration:** 4 weekends in October (October 4 - October 27)
- **Scooters in Service:** 25
- **Weather Conditions:** Predominantly chilly, (especially in the mornings and nights) with significant rain on the second Sunday, impacting ridership to some extent.

This trial was conducted using a structured lock-to model, which ensured scooters were secured at designated racks after each ride. This method, chosen over a free-floating (dockless) model, aimed to minimize disruption in public spaces, prevent scooter clutter, and provide a clear user experience. The approach was effective and helped manage scooter usage and parking behavior in high-traffic areas, establishing a solid baseline for future long-term implementations.



Ridership Analysis

Overall, ridership was slightly less than our projected expectations, especially given the impact of cooler temperatures and weather-related challenges. Albany led in user engagement, with 45 rides in the first weekend, thanks to slightly warmer temperatures and favorable conditions. While participation dipped during rainy periods, interest in scooter access was high across all cities.

The pilot provided valuable insights into how weather, local events, dock locations, and population density influence ridership. These findings suggest that a future full-season deployment could see even higher participation rates, especially considering the program operating during warmer months. Extending access and increasing the number of scooters at strategic locations across each city would likely enhance ridership and cement scooters as an integral part of the region's transportation network. We found almost all of the trips during the pop-up were for leisure (same start and end dock).

Community Awareness and Interest

Community response to the trial was positive, with many residents expressing excitement and curiosity about the scooters. Interest was particularly high among individuals looking for efficient, last-mile transportation options, as well as those attending local events and attractions. While initial outreach efforts helped generate some awareness, the trial also highlighted the importance of consistent, multi-channel promotion to establish scooters as a recognized and widely-used mode of transport.

Participants and community members were vocal in their support for permanent scooter access, seeing it as a convenient, eco-friendly solution that aligns with the broader goals of sustainable urban mobility. Future permanent programs could benefit from stronger, targeted marketing efforts, including digital campaigns, community events, and partnerships with local businesses to maximize engagement and support long-term adoption.

User Experience and Feedback

Feedback gathered during the trial was overwhelmingly positive, underscoring a strong user interest in integrating scooters as a viable part of the Capital Region's transportation options. Of the trips reviewed by riders in the app, 74% received 5 stars, the highest rating possible.

- **Scooter Reliability:** Minimal technical issues were reported, and the scooters were generally well-received for their reliability and ease of use. Users appreciated the smooth operation of the scooters, though some encountered challenges when attempting to re-lock scooters to racks, which occasionally resulted in additional trip charges. Addressing these minor re-locking issues in the future would further streamline the user experience.
- **Environmental Appeal:** Riders also frequently mentioned the scooters' eco-friendly appeal. Many viewed scooters as a practical alternative to car trips for shorter distances, particularly in urban areas. This aligns with CDTA's mission to support sustainable, multimodal transportation options in the Capital Region, and suggests that scooters could play a key role in reducing traffic congestion, lowering emissions, and supporting the area's environmental goals.
- **Long-Term Potential:** The trial results point to strong long-term potential for scooters as part of a multimodal transportation system in the region. By facilitating last-mile connections to transit stations, shopping districts, and event venues, scooters could enhance the overall transit ecosystem, complementing CDTA's existing services and encouraging a shift toward shared and sustainable mobility solutions.
- **Positive Reviews:** Of the trips reviewed by riders in the app, 74% received 5 stars, the highest rating possible.



Incident Report: Scooter Theft

During the Troy pop-up, one scooter (Scooter 46) was reported stolen after its last known lock-to event on October 12. Despite the team's efforts to locate the scooter, including multiple visits to the vicinity of its last GPS location, the scooter could not be recovered. Safety considerations prevented further investigation, as the scooter's last known location was reported to be a high-risk property. The structured lock-to model effectively mitigated theft risk for the majority of scooters, and additional safeguards, such as enhanced tracking and retrieval protocols, can further improve asset protection in future deployments. We believe this was an isolated incident and the last rider of the scooter was not involved with the theft of the scooter.



CDTA Scoot Pop Up Trial Stats:

Albany

Total Number of Trips: 46
Average Trip Duration: 22 minutes
Average Trip Distance: 2.36 miles

Troy

Total Number of Trips: 28
Average Trip Duration: 24 minutes
Average Trip Distance: 1.82 miles

Schenectady

Total Number of Trips: 21
Average Trip Duration: 31 minutes
Average Trip Distance: 2.61 miles

Saratoga Springs

Total Number of Trips: 26
Average Trip Duration: 26 minutes
Average Trip Distance: 2.46 miles

Total Number of Scooter Trips: 121

Total Number of Usage Minutes: 3011

Total Number of Usage Miles: 279

Total Number of Accounts Created: 337

Total Number of IDs Approved: 316

Total Number of ID Rejected: 10





Recommendations

Based on the success of this pop-up trial, several recommendations can guide the program's potential expansion:

1. **Expand Marketing Efforts:** Establish a robust promotional plan that includes social media outreach, community events, partnerships with local businesses, and on-the-ground awareness campaigns to strengthen community engagement.
2. **Optimize Seasonality:** Deploy future scooter trials or programs during warmer months, when ridership potential is highest, to maximize usage and visibility.
3. **Increase Scooter Density:** Expanding scooter availability across key locations in each city would enhance accessibility, making the program more relevant to a larger audience. Higher-density scooter placements would support increased ridership by providing more touchpoints throughout each community. Additionally riders will use scooters to go from point A to point B more often if there were a larger geographic region to travel in.
4. **Enhance Data Collection and User Feedback:** Future trials should incorporate surveys and user feedback tools to gain deeper insights into rider preferences, usage patterns, and improvement areas. This information can help refine operational strategies and improve user satisfaction.
5. **Liability and Safety Considerations:** Additional steps, including comprehensive Terms of Service (ToS), age verification, and user training resources, were implemented in this trial to ensure safety and limit liability. These measures should continue to be prioritized in future deployments.

Conclusion

The CDTA scooter pop-up trial demonstrated the feasibility and appeal of scooters as a permanent addition to the Capital Region's micromobility network. Community feedback indicates a strong interest in longer-term, permanent implementations, particularly if accompanied by improved marketing, expanded coverage, and strategic timing. By investing in a well-rounded, sustainable scooter program, CDTA can further its commitment to accessible, eco-friendly transit solutions, transforming urban mobility across the entire Capitol Region.

Appendix C

CDPHP Cycle! Electric Charging Hub Locations

The following appendix outlines CDPHP Cycle! hubs identified for electrification and their subsequent justifications. 11 hub locations have been identified for electrification in addition to the Joseph L Bruno Rail Station. These 11 proposed electrified bikeshare hubs located in the City of Albany present the opportunity to improve service up-time for bikeshare at major hubs located in proximity to demand inducers, CDPHP Cycle operations staff recommendations based on logistical considerations, disadvantaged communities, and CDTA regular bus service and Bus Plus service.

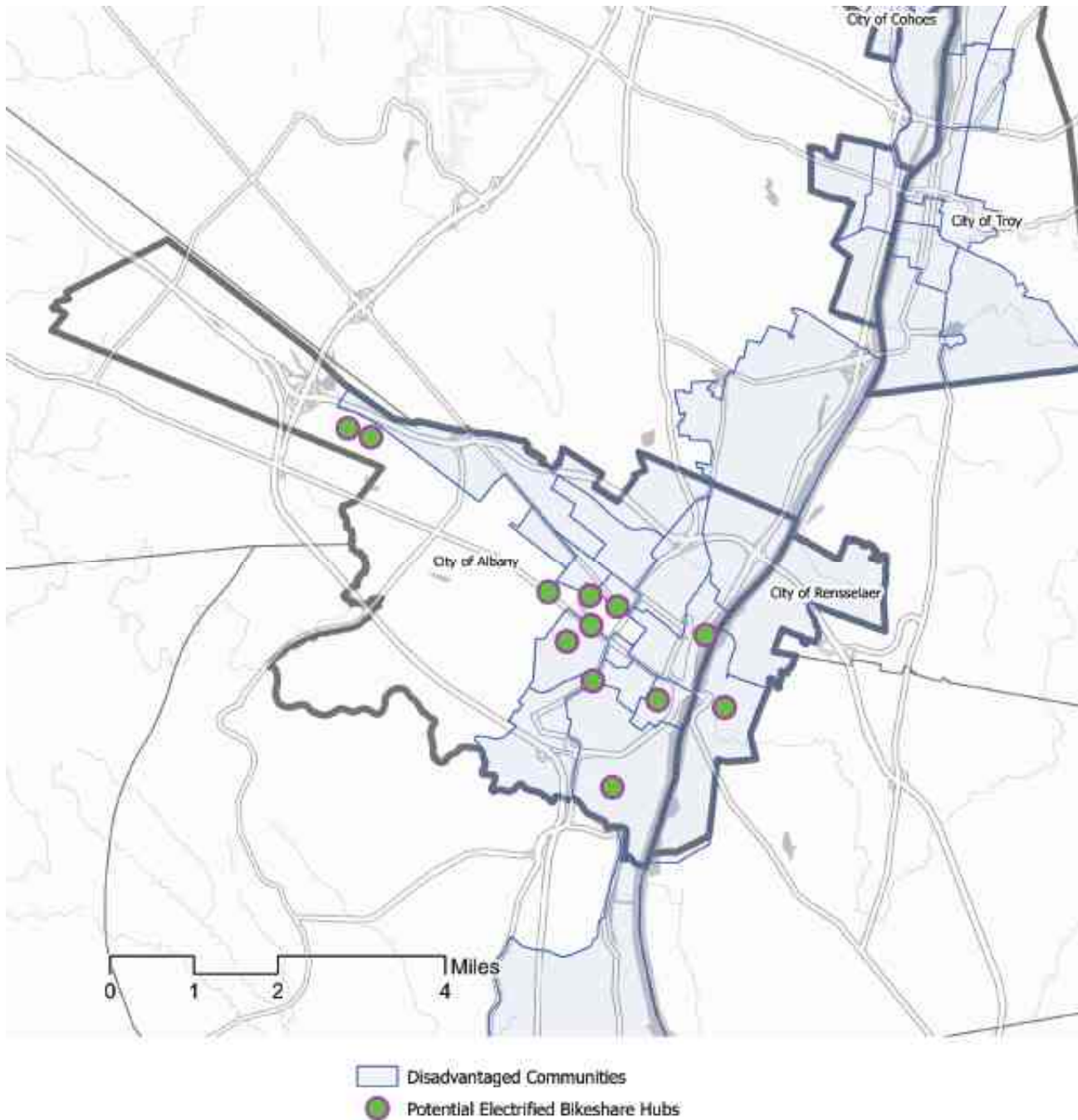


Figure 21: CDPHP Cycle! hubs identified for electrification

SUNY Albany - Empire Commons and Collins Circle

SUNY Albany's main campus is located outside of DAC boundaries, though the campus is served by Bus Plus - Purple Line, and is a major hub of activity in the City of Albany. Although this site is located outside of a DAC, this is a major destination point for residents of nearby DACs. The campus is a major driver for CDPHP Cycle! ridership, meaning that batteries will be depleted at higher rates. Increasing charging efficiencies on campus will improve up-time for the service and expand transit's reach. Proximity to Bus Plus also improves siting efficiency, as Bus Plus stops are currently electrified.

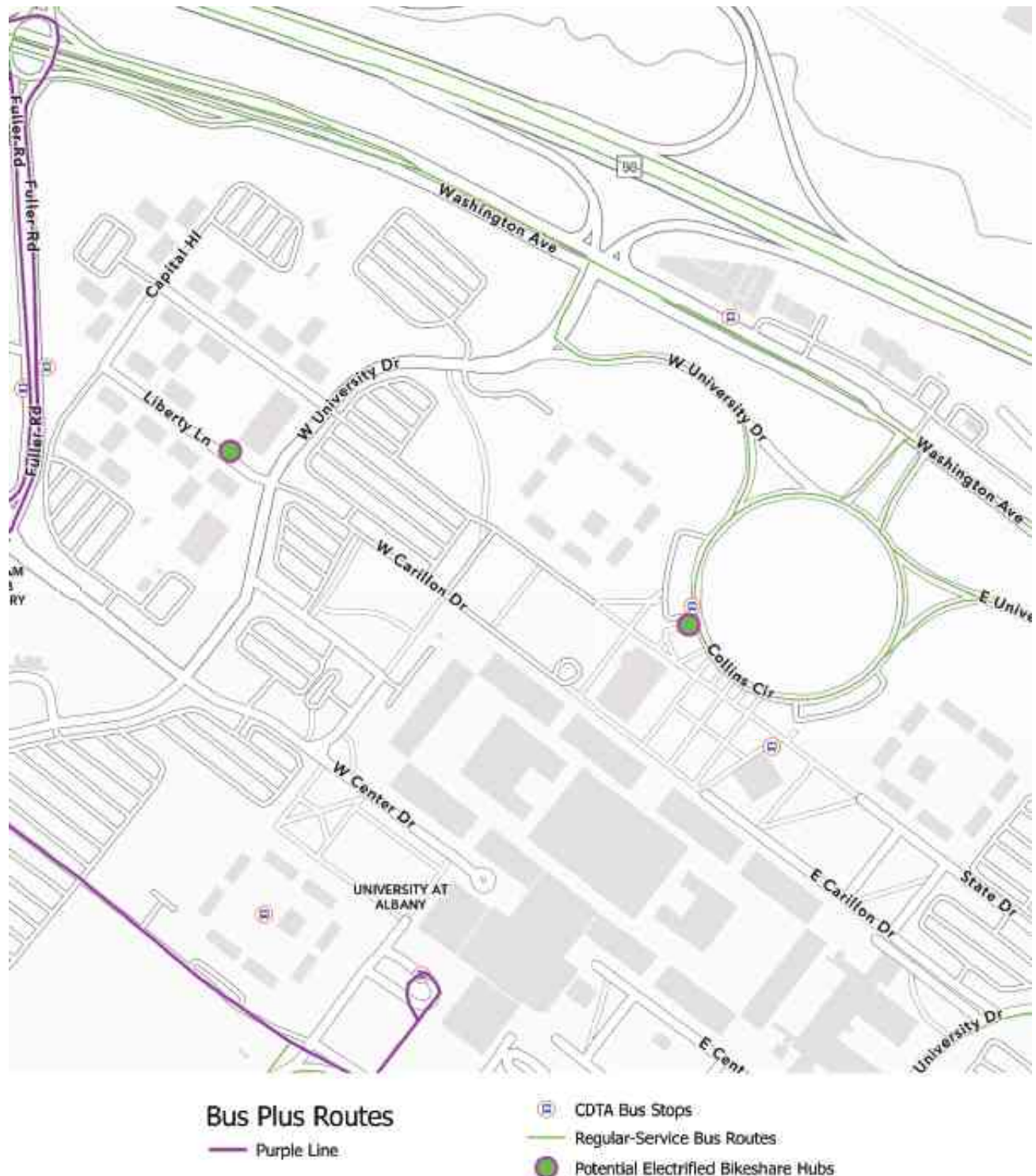


Figure 22: SUNY Albany - Empire Commons and Collins Circle



SUNY Downtown Campus

SUNY Albany's Downtown campus is a major demand inducer for CDPHP Cycle!, and is located on the Bus Plus Purple Line, presenting the opportunity to improve uptime for bikeshare users and expand transit's reach. Although this site is located outside of a DAC, this is a major destination point for residents of nearby DACs. Proximity to Bus Plus also improves siting efficiency, as Bus Plus stops are currently electrified.

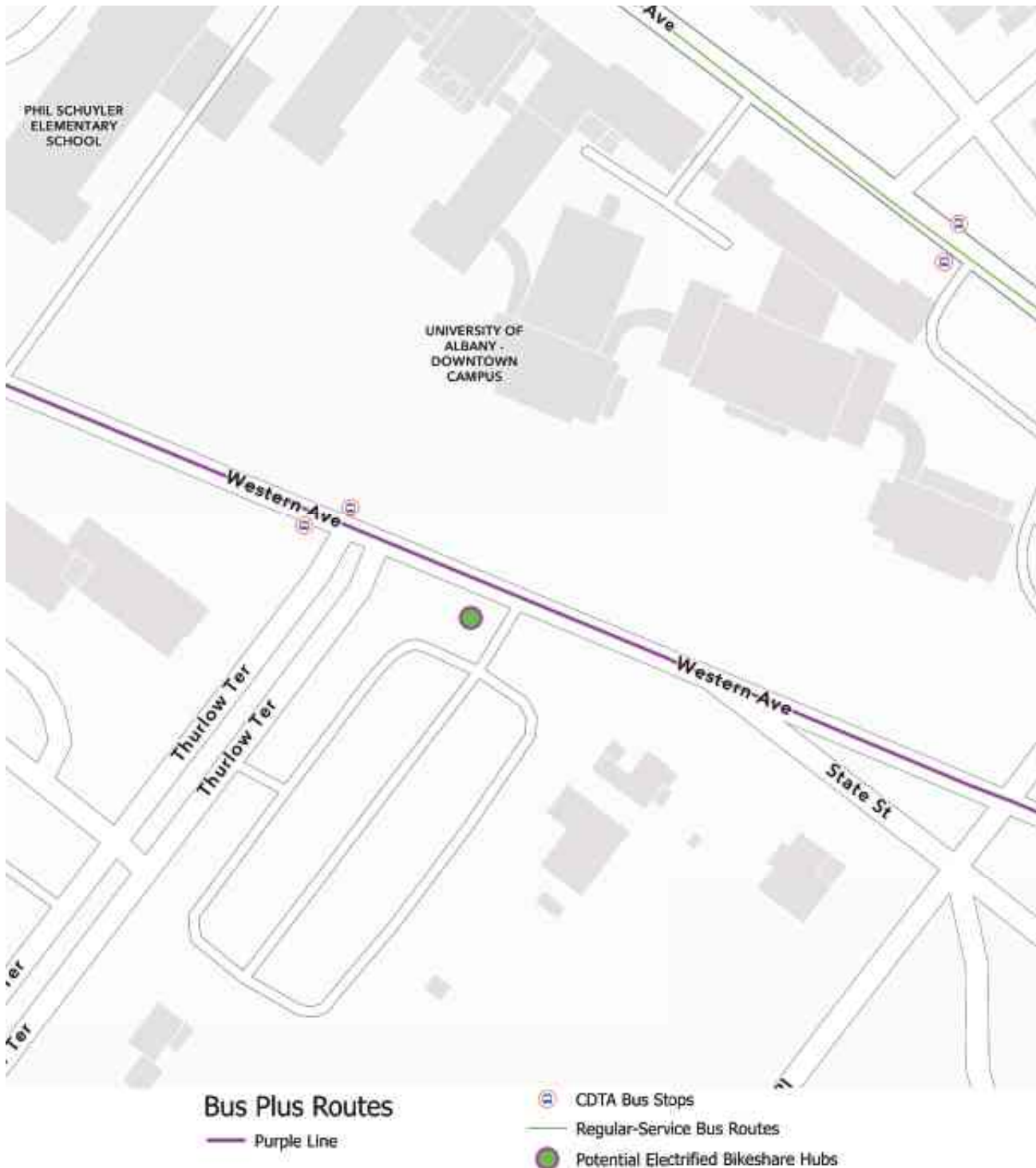


Figure 23: SUNY Downtown Campus

Ontario and Madison

Madison Ave is a major corridor in the City of Albany. Its intersection with Ontario St is located in a mixed use neighborhood with strong bikeshare usage that is also a DAC The space is also parking constrained, meaning electrification of the hub would improve operational efficiencies, thereby increasing service up time. The hub is also located along the Madison Ave - Western Ave CDTA bus line.

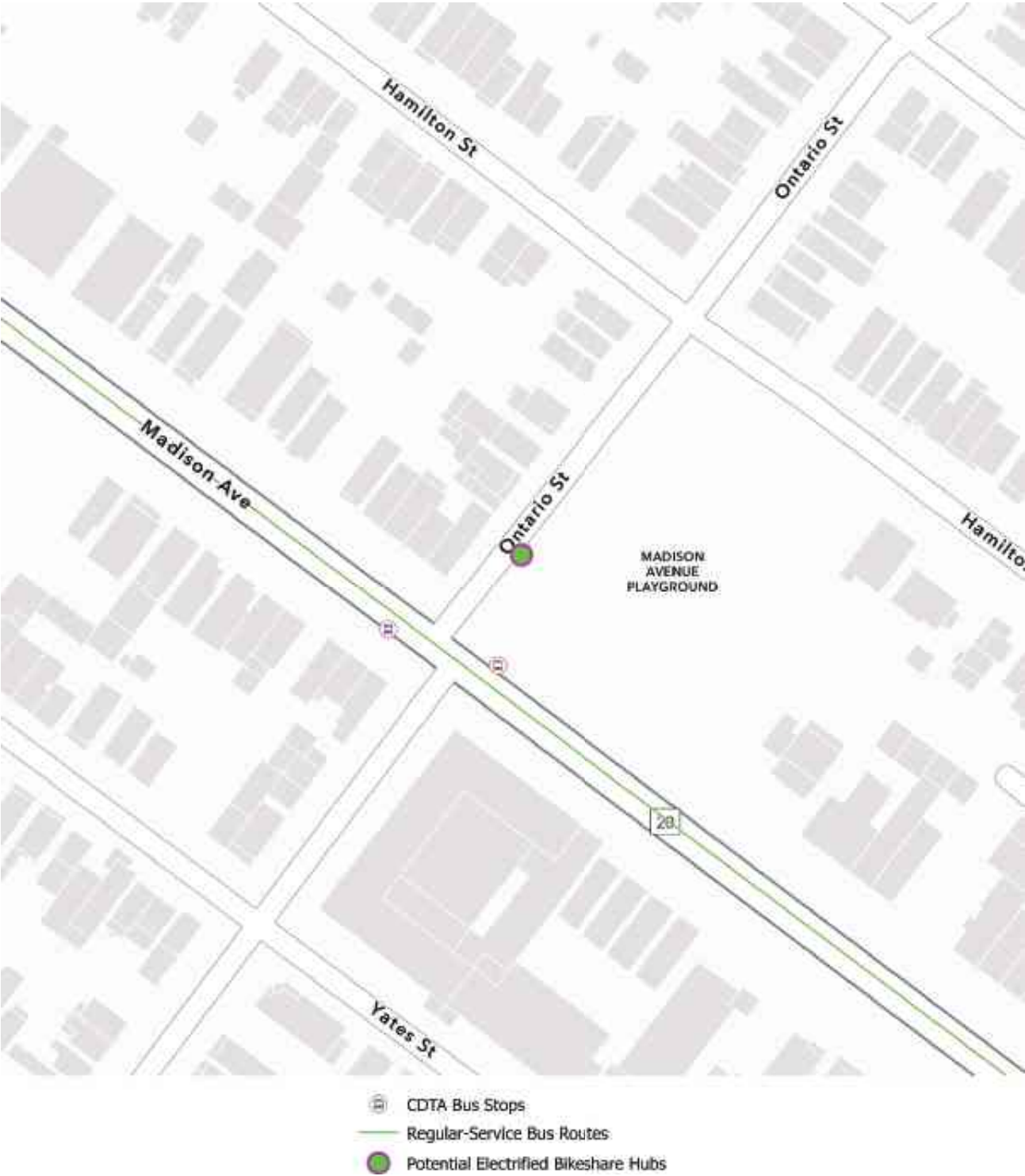


Figure 24: Ontario and Madison Ave



Corning Preserve

The Corning Preserve is located in a DAC, and is also a major demand inducer for CDPHP Cycle. Its relative isolation from Albany means it would benefit from an electrified hub, which would in turn increase up-time. It is also within proximity to the Madison Ave - Western Ave bus route. There are existing nearby structures that are electrified, which would streamline the electrification process.



Figure 25: Corning Preserve

Townsend Park

Townsend Park is located in a DAC, and is close to Bus Plus Purple and Red Lines and corresponding stops. The hub is located directly adjacent to a Purple Line stop, meaning there is convenient access to electric infrastructure, thereby increasing siting efficiency. Electrifying the hub has the ability to expand transit's reach through both Bus Plus lines by improving up time.

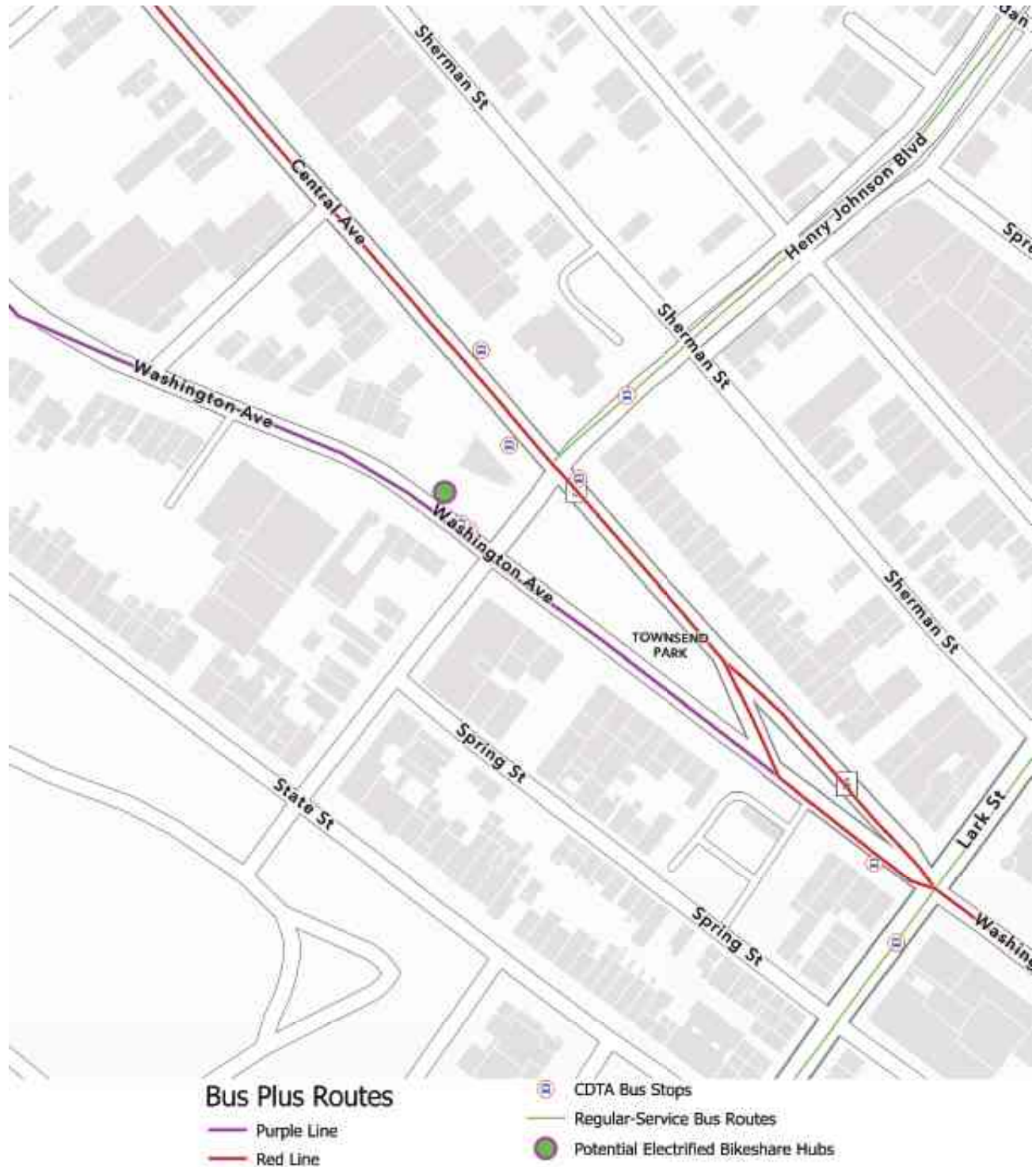


Figure 26: Townsend Park



Morton and Delaware Ave

Morton and Delaware are at the intersection of the Mid City Belt North Albany Shuttle routes. The hub is in a DAC and is in a dense neighborhood and would be a strong candidate for electrification.



Figure 27: Morton and Delaware Ave

Morton Station

Morton Station is located on the Bus Plus Blue Line, and is located near a DRIVE CDTA E-Carshare hub. The bikeshare hub is located next to the Bus Plus station, meaning it has nearby access to electrification. The station is located in a DAC and is next to Albany County social services, meaning there is a strong case to expand transit's reach by improving service up-time.



Figure 28: Morton Station



Albany Medical Center

Albany Medical Center is a major employment center within a DAC, with the medical center and Albany Law School located nearby, inducing demand for bikeshare trips. The hub is also served by Mid City Belt and New Scotland Ave bus lines, presenting an opportunity to improve transit's reach by expanding service up time.

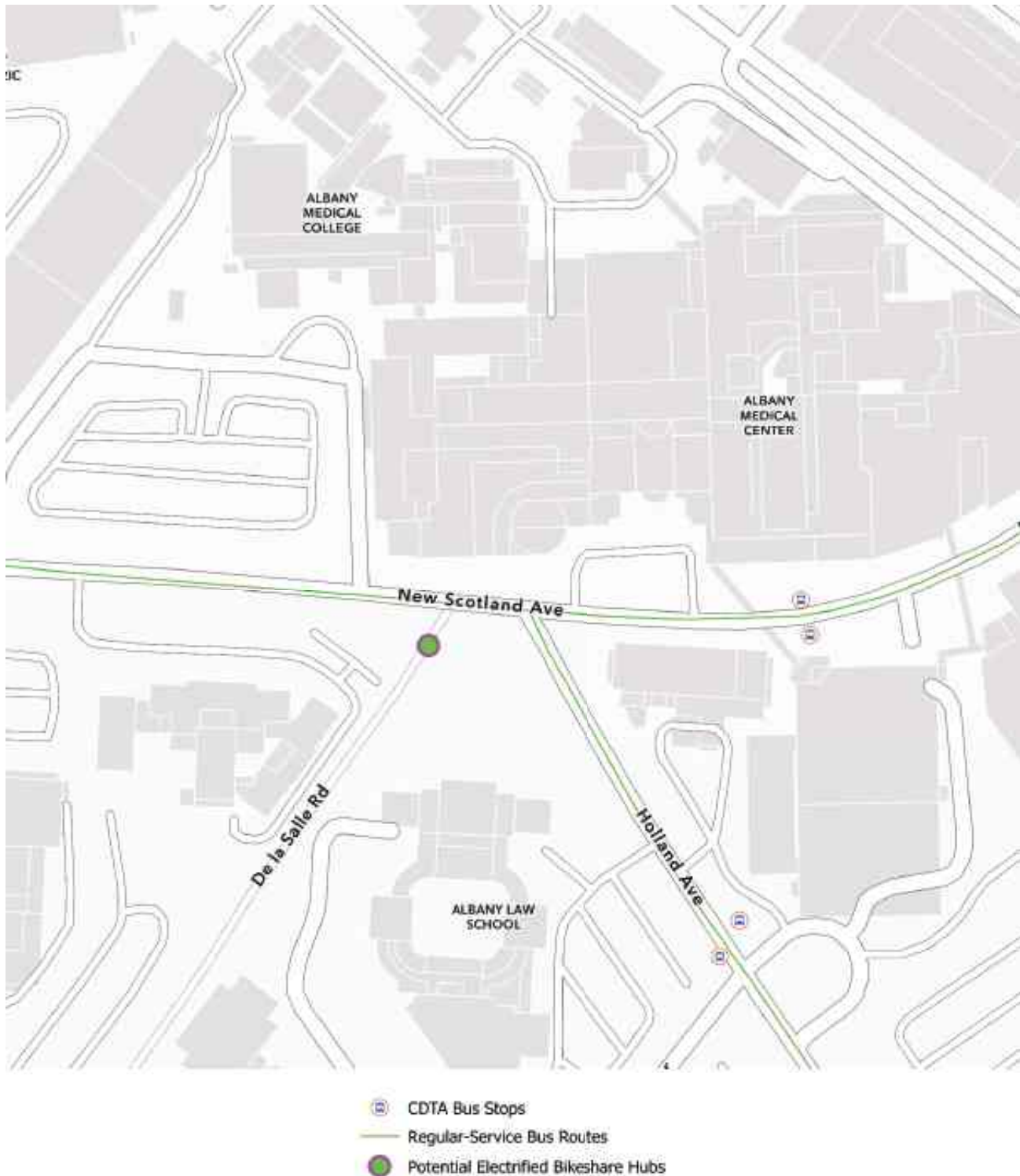


Figure 29: Albany Medical Center

Washington Park

Washington Park is located on the edge of a DAC, bound by Madison Ave. The park is a demand inducer for bikeshare trips and would benefit from electrification to improve service uptime. The hub is also co-located with Madison Ave - Western Ave bus stops.

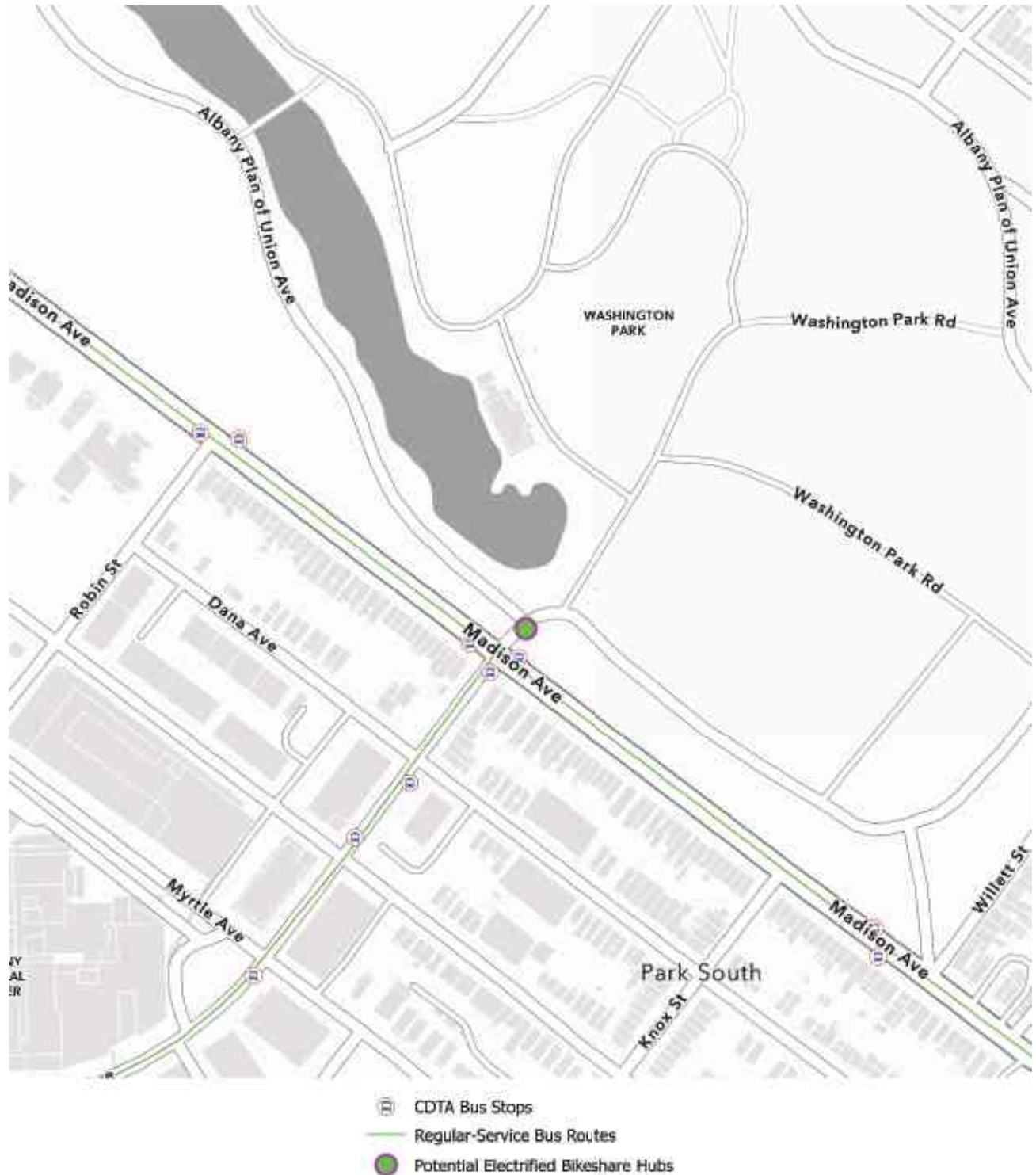


Figure 30: Washington Park



Albany County Rail Trail

The Albany County Rail Trail is relatively isolated from the City of Albany, meaning it would benefit from electrification to improve operational efficiencies. The hub is also located in a DAC, and is at the terminus of the Bus Plus Blue Line, meaning there is convenient access to electrification due to the existing Bus Plus Station.

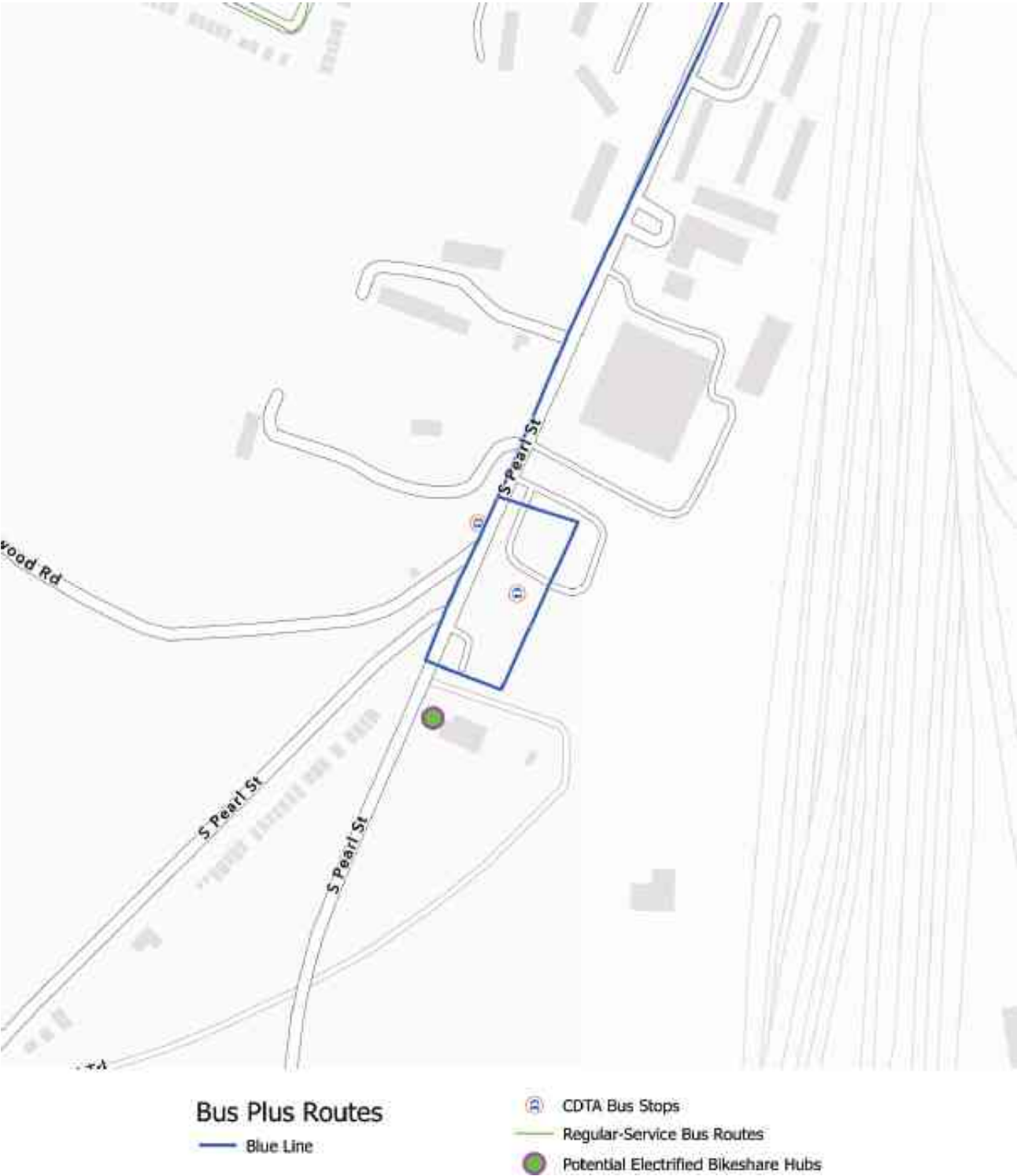


Figure 31: Albany County Rail Trail

Appendix D

Engineering Site Feasibility Reports



SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

PROJECT: SHARED MOBILITY ELECTRIFICATION FEASIBILITY

SPECIFIC PROJECT SITE: 525 EAST ST, RENSSELAER NY

C&S PROJECT NO.: BE4001001

SITE ADDRESS: 525 EAST ST, RENSSELAER NY

SITE VISIT DATE: 07/03/25

PREPARED BY: C. M. FRANCIS

SITE CONDITIONS DURING VISIT: RAINY/SUNNY, 80°F TO 85°F

- Project Intent:** The focus of this project is to investigate the feasibility of adding the following electric micromobility to the Rensselaer Amtrak Rail Station: e-bike charging ports/storage lockers, a Level 2 EV charging for two additional vehicles, and an electric charging station for ten e-bike shares with Skyhook solar. Additional project focus is to investigate the current central parking lot lighting at the Amtrak Rail Station to assess the benefits of installing more energy efficient lighting.
- Executive Summary:** A field visit was conducted at the Rensselaer Amtrak Rail Station on July 3rd. The proposed micromobility update location was examined, sufficient space is available in the area. The existing electrical infrastructure was examined; an existing EV sub panel is run to and supports the existing (2) two Level 2 Chargers. The existing sub-panel for EV charging is located in the Station's IT room and is run through the two-story parking garage. Additionally, the parking lot lighting was examined and documented while on-site. The upper station deck, existing EV charger, and parking lot lighting has all been updated within the last ten years.
- Existing Conditions:** The existing Level 2 EV charger is served from a designated panel in the Rensselaer Rail Station's IT room. The panel has sufficient space for additional circuit breakers. Existing exposed (surface-mount) conduit is run through ceiling space of the parking garage to the EV charger unit.
There are approximately twenty-nine existing decorative post top LED site lighting fixtures in the station parking lot. The fixtures are set via a time clock which is programmed to turn on and off thirty minutes before and after dusk and dawn respectively; the run time is approximately 3900 hours per year. The fixtures were installed recently, approximately 2017, at the time the top deck was renovated. They are mounted at various heights throughout the parking lot. The average pole length is 15' with some variation throughout the parking lot. Wattage per fixture is approximately 60 watts.
- Recommended Scope of Work:** The intention is to utilize the available space in the existing EV electrical sub panel in the Rensselaer Rail Station for new circuit breakers:
A 40A breaker and #8 AWG from the panel following the existing conduit path through parking garage ceiling space, approximately 350' to a level two EV charger.



SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

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A 20A breaker and #12 AWG from the panel and following the existing conduit path through parking garage ceiling space, approximately 150' to e-bike charging ports in e-bike lockers.

A 20A breaker and #12 AWG from the panel and follow the existing conduit path through parking garage ceiling space approximately 350' to e-bikeshare chargers with Skyhook solar.

Lighting was recently updated and functions well. The recommendation would be for the lighting to remain as these fixtures are likely good for 50-75,000 hours.

5. **Key Issues and Items to Be Resolved:** Parking lot pavement in proposed micromobility location is in some disrepair and could be replaced. Pathway for conduit and exact location for additional EV chargers, e-bike storage charging lockers, and e-bikeshare chargers would need to be decided with owner.
6. **Appendix:**
 - a. Appendix A – Site Map & Photos
 - b. Appendix B – Construction Cost Estimate

SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

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Appendix A

SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

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Site Map



SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

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Electrical Vehicle Sub Panel



SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

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Parking Lot



SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

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Existing EV Charger

SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

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Parking Garage



Shared Mobility
Rensselaer Rail Station, 525 E. St.
Construction Cost Estimate

Date: 18-Jul-25
By: C. M. Francis
Rev:

SHARED MOBILITY ELECTRIFICATION FEASIBILITY NARRATIVE

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Appendix B

Description	Material Cost	Labor Cost	Total Cost
Demolition and Removal			
Misc. Electrical Demolition and Removal		\$ 1,500	\$ 1,500
Section Total	\$ -	\$ 1,500	\$ 1,500
Electrical Installation			
E Bike Charging Lockers (5)	\$ 5,000	\$ 1,250	\$ 6,250
E Bike Share Charging Stations (10)	\$ 10,000	\$ 5,000	\$ 15,000
Skyhook Solar Bikeshare Charger	\$ 30,000	\$ 5,000	\$ 35,000
E Bike Charger feeders (conduit and wiring)	\$ 2,500	\$ 3,250	\$ 5,750
EV Charger feeders (conduit and wiring)	\$ 1,750	\$ 3,500	\$ 4,813
E Bike Locker Charger 20A-P breaker	\$ 100	\$ 200	\$ 300
E-BikeShare Charger 20A-P breaker	\$ 100	\$ 200	\$ 300
Level 2 EV Charger	\$ 10,000	\$ 5,000	\$ 15,000
EV Charger 40A-P breaker	\$ 125	\$ 250	\$ 375
Electrical Connections	\$ 150	\$ 150	\$ 300
Grounding	\$ 250	\$ 250	\$ 500
Section Total	\$ 59,975	\$ 24,050	\$ 83,588
Misc.			
General Expenses		\$ 2,500	\$ 2,500
Section Total	\$ -	\$ 2,500	\$ 2,500
Subtotal	\$ 59,975	\$ 28,050	\$ 87,588
Notes:			
1. Hazardous material abatement and disposal costs were not included.			
2. Cost estimates are subject to changed based on final design and equipment selection.			
	Construction Indirects (8%)	\$ 7,007	\$ 7,007
	Contractor Markup on Materials (15%)	\$ 8,996	\$ 8,996
	Contingency (20%)	\$ 17,518	\$ 17,518
	TOTAL	\$	\$ 121,109



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