

Tompkins Consolidated Area Transit, Inc.

2017 Annual Report



ITHACA, NEW YORK

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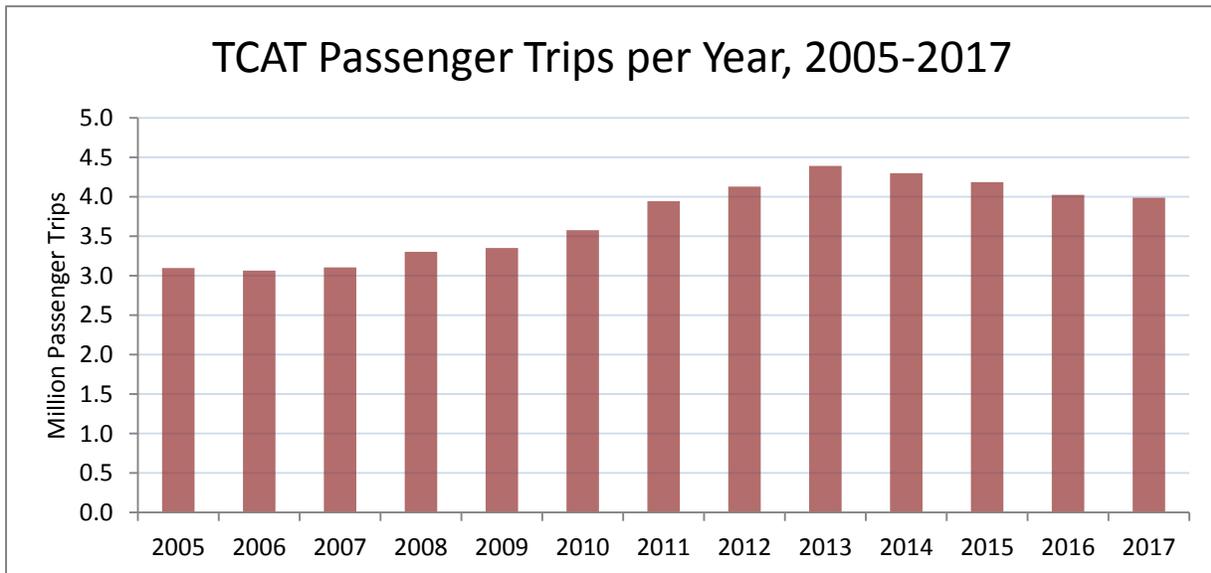
Produced by TCAT in October 2018.

For additional information on bus routes, trip planning tools, and current projects please go to our website: www.tcatbus.com

Overview

Tompkins Consolidated Area Transit, Inc. (TCAT) is a not-for-profit corporation that provides public transit to semi-rural Tompkins County, located in the Central Finger Lakes region of upstate New York. Tompkins County has a population of about 105,000 and is home to the City of Ithaca, its urban core and county seat, Cornell University and other institutions of higher learning that draw students and faculty from all over the world. Higher education not only serves as the major cornerstone of Tompkins County's economy, but also enriches the local culture.

TCAT was borne from three transit systems operated by the county, the city and Cornell whose leaders in the early 1990s recognized the inherent value of having a single public transit system. In 1998, the three entities established a joint venture and later incorporated as a not-for-profit single employer, effective 2005. TCAT's largest single source of funding is through New York State, based on its ridership and miles traveled. The system is also subsidized by federal funds, passenger fares and contributions from its local underwriters: the city, the county and Cornell



For the past several years, TCAT's annual ridership has been hovering around 4 million with ridership starting a downward trend in 2014, following seven consecutive years of growth. In 2017, TCAT recorded 3,987,830 passenger trips; per capita that translates to 38 trips for every human being in TCAT's service area.

In 2017, ridership declined by 0.9 percent from 2016, the fourth consecutive year of ridership decreases. Ridership decreases in 2017 occurred almost entirely in the first half of the year; the second half of the year saw a small increase in ridership in comparison to the year before.

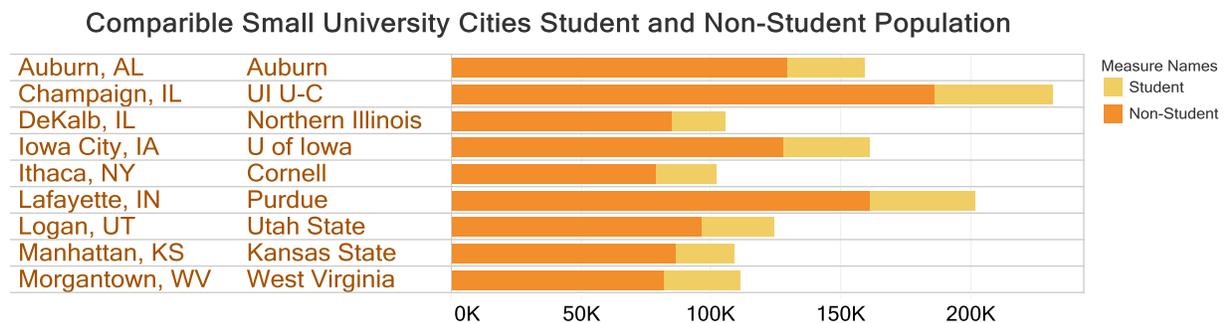
A note of interest: While TCAT's 2007-2013 ridership growth bucked national trends, the post-2013 decline reflects a national shift in falling ridership.

Some other specifics for 2017:

- **Fleet size:** 54 buses, including eight electric diesel hybrids
- **Service hours:** 121,630
- **Scheduled trips:** 300,000
- **Service miles:** 1,579,450

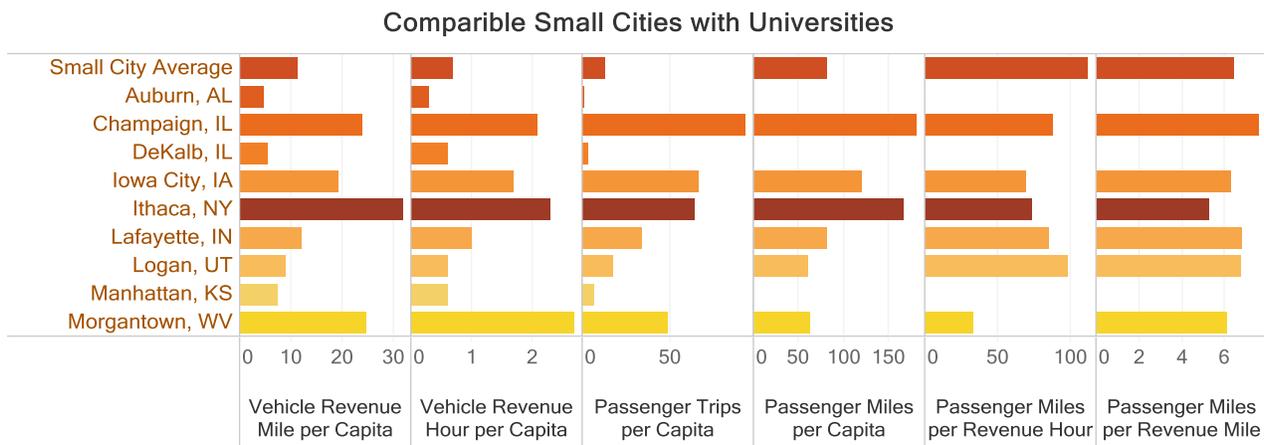
Comparable Systems

To illustrate where TCAT ranks with comparable systems, we selected eight other areas with similar-sized populations and similar-sized universities from the National Transit Database (NTD) Small Transit Intensive Cities (STIC) dataset. We used county or metropolitan area population and included student populations only from major educational institutions.



Student and Non-Student Metropolitan Area Population. Student population includes only the major university in the area. Populations source: Wikipedia.

Of the eight areas under study, Tompkins County is the smallest, and only similar in size to four, and between 40-70 percent the size of the other four. TCAT performed better than the average for all small cities in four of the six measures in the STIC dataset, and somewhat better than average for all nine comparable cities.



2017 Data from NTD Small Transit Intensive Cities, including cities in similar sized counties or metropolitan areas with similar student population by percent. Note Ithaca passenger mile number is estimated based on a 2014 statistical sampling. Zero values indicate data is not available and imply values are below the small city average.

Per capita: TCAT exceeded in vehicle miles; ranked second in both passenger miles and vehicle revenue hours; and placed third in the number of passenger trips.

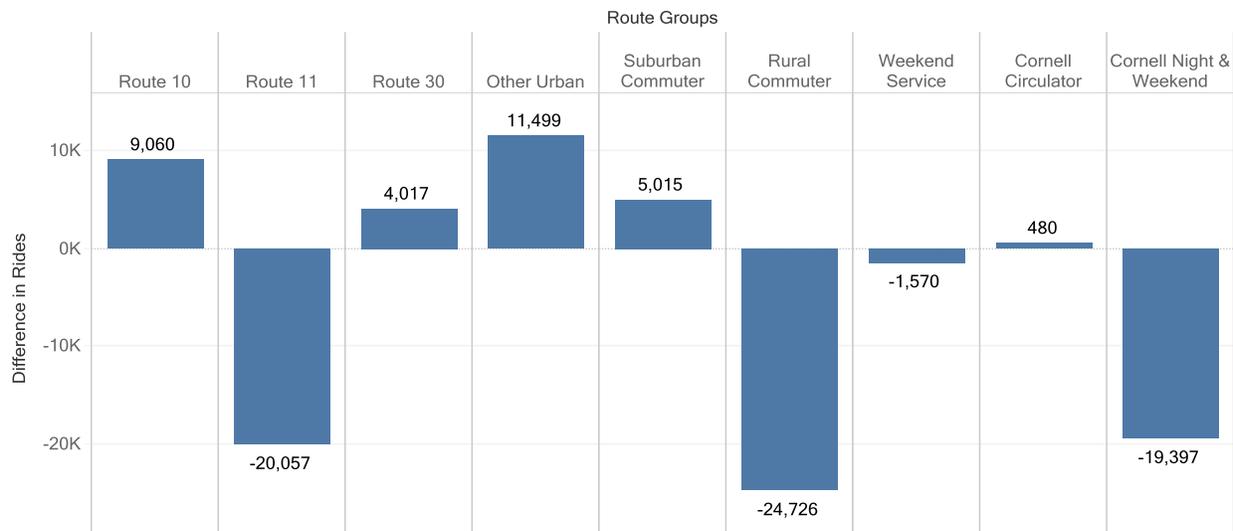
Per vehicle-mile: TCAT lagged behind in both passenger miles and revenue hours.

TCAT’s relatively low number of passenger miles per trip is related a large number of trips taken between short-distance campus stops, as well as the low ridership levels on most rural service. A new study of passenger-miles-per-trip is due out for 2018, and possibly will be available for 2017 ridership as well.

Ridership

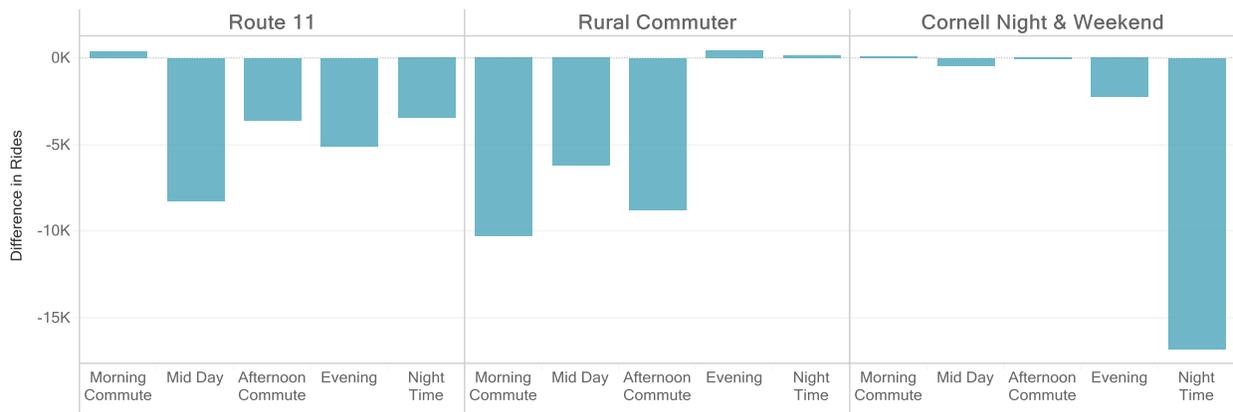
Changing ridership

Year-over-Year Ridership Change by Route Group



Ridership decreased by 35,535 or 0.9 percent in 2017 as compared to 2016. While ridership was sharply down on the Ithaca College Route 11, rural commuter routes, and Cornell night and weekend service, the rest of the system was either nearly flat or trending upward.

Year-over-Year Ridership Change by Time of Day, Selected Route Groups



The steepest drop in Route 11 ridership occurred in mid-day, between 10 a.m. and 3 p.m., a time of day that typically draws fewer regular riders compared to peak times. In addition to IC's Route 11, Cornell night ridership declined substantially last year.

In the meantime, TCAT continues to examine the potential effects from Transportation Network Companies (TNCs), such as Uber and Lyft. The impact from TNCs on public transit still remains largely unclear, not only locally, but nationally. Last year, most TCAT ridership decreases occurred before TNCs were allowed to begin operating locally. In addition to the arrival of TNCs, one of the local taxi companies started charging \$1 fares on night campus service last year. Whatever the reasons, ridership has continued to drop on Cornell night and weekend routes so far in 2018.

Looking at other service, rural commuter ridership continues to drop. This is probably due to a combination of factors to include: lower fuel prices; an abundance and affordability of used cars; and service disruptions caused by bus and driver shortages.

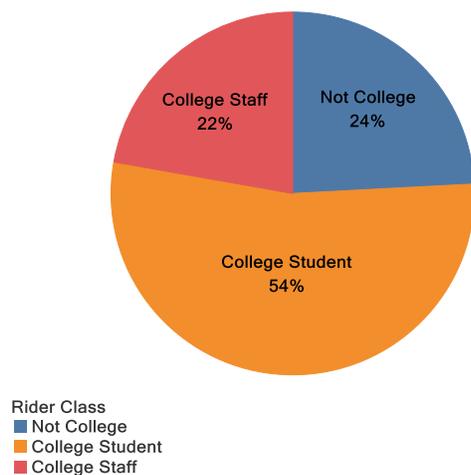
Riders

Nearly 80 percent of TCAT's ridership fares are paid via college-issued passes, half of which are held by students. TCAT rider categories are calculated by pass type, not by a rider's demographic category.

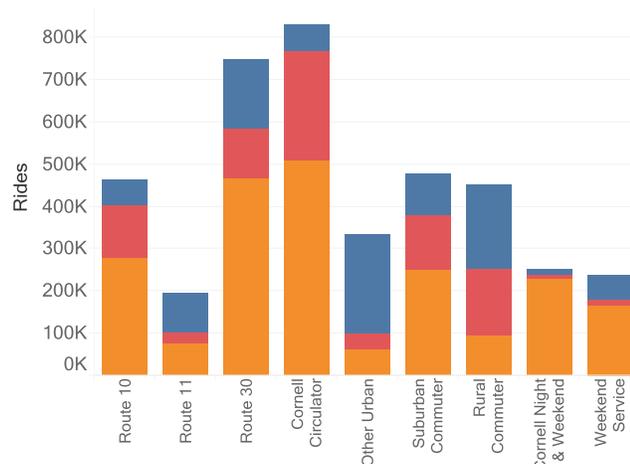
The vast majority of these student and staff rides was on Cornell-issued fare media. Ithaca College cards constituted the majority payment for the Ithaca College Route 11. Tompkins Cortland Community College (TC3) cards were a substantial fare medium on Route 43, and to a smaller degree on TC3 weekend Route 75. Ithaca College staff card fares were responsible for a very small portion of ridership system-wide. Field observations indicate that a meaningful portion of rides classified as non-college passes were instead cash fares paid by students.

Non-college fares represented a substantial majority of rides on non-campus urban routes, as well as the largest portion of rural commuter rides. Staff passes represent a large share of rides on the rural and suburban commuter routes, the Route 10 downtown shuttle, and Cornell circulator routes.

2017 Ridership by Pass Type



Rider Pass Type by Route Group

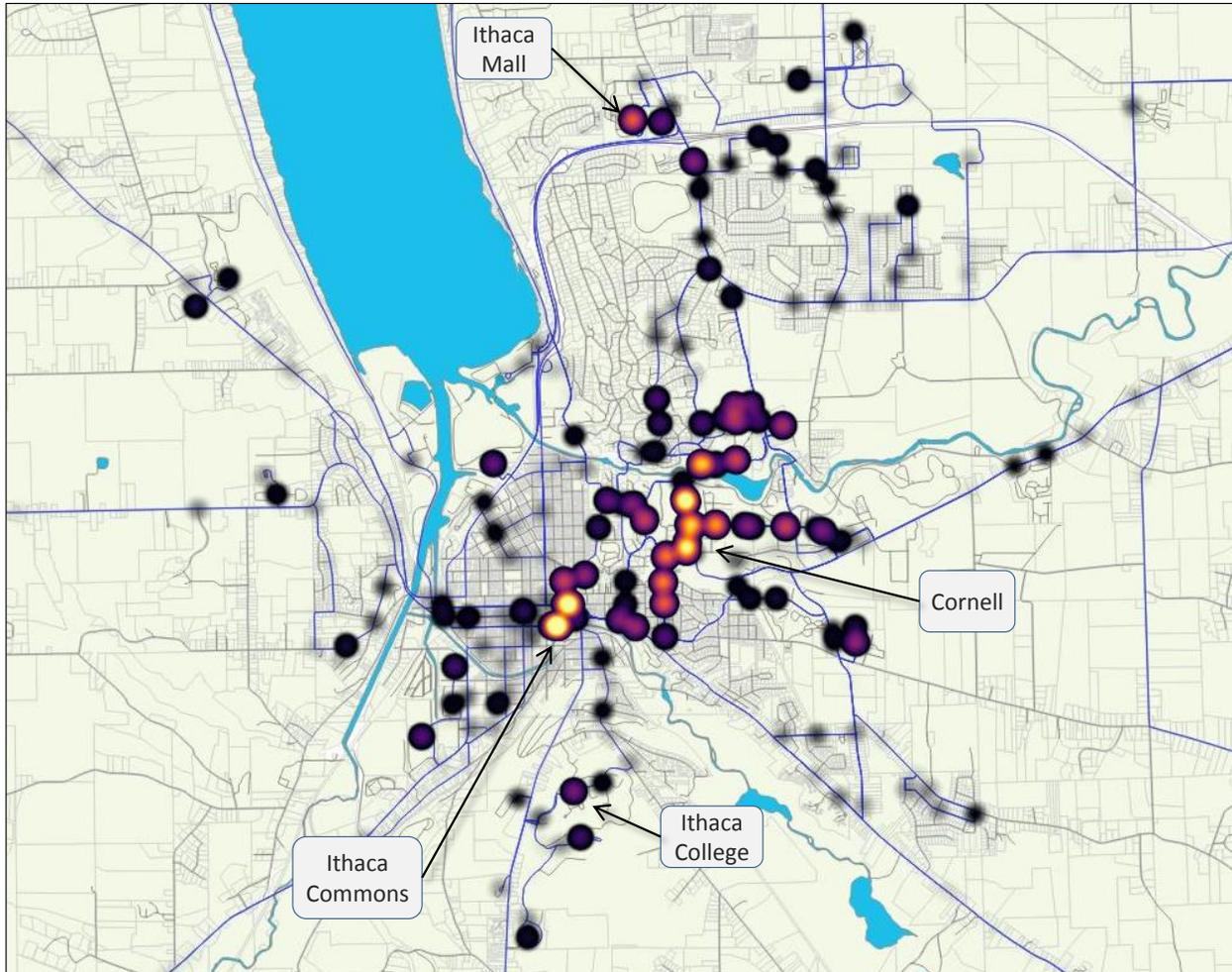


Note: for the above analysis, students and staff from Cornell, Ithaca College, and TC3 have been grouped together.

In 2017, ridership decreased by around 1 percent as compared to 2016, and by nearly 10 percent as compared to our peak service year 2013. This relatively insignificant decline last year marked the tipping point when the 3 ½-year ridership decline went into reverse. So far in 2018, ridership has been increasing at an accelerated pace.

Ridership by Stop

Urban ridership was concentrated in Cornell and around the Ithaca Commons, with additional heavy use nodes at Wegmans and Walmart, the Ithaca Mall, and Ithaca College. See map below:



Paratransit

TCAT contracts with Gadabout Transportation Services, Inc. to provide parallel transit services to persons with disabilities as mandated by the federal Americans with Disability Act (ADA). From 2016 to 2017, Gadabout's ADA ridership declined by 10 percent to just under 27,000 trips, a trend that Gadabout continues to analyze. One possibility is that seniors are healthier and living longer than their previous cohorts, and are opting to driver later in life.

Service

TCAT's service remained largely the same from 2016 to 2017. In 2017, TCAT continued its transition to designated-stops-only service to cover its urban routes by year's end. Some rural trips were eliminated based on low ridership, and TCAT stopped serving Convenient Care on Route 32, again due to low demand, and because the outpatient medical facility is already served by Route 31.

It's important to note that TCAT changes its service three times per year and is continually analyzing ridership, route timings, and evaluating service change requests. Depending on available resources, TCAT will make changes whenever possible to meet the community's needs.

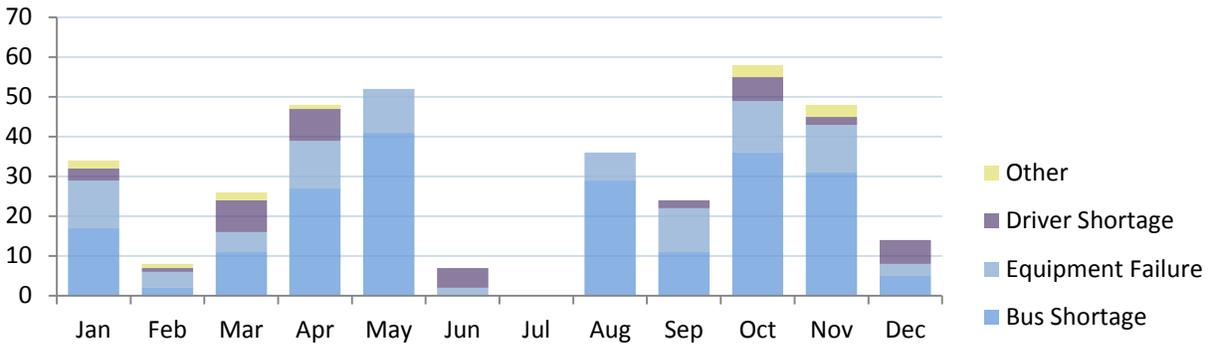
Impacts on Service

Construction projects in the city caused major delays and detours in 2017. College Avenue, a main thoroughfare for many TCAT routes, was under construction for most of the summer. While the road remained open to buses for most of that time, TCAT experienced substantial delays due to construction-related congestion. At around the same time, the Stewart Avenue Bridge over Cascadilla Creek was closed as well, and until College Ave re-opened, 118 bus trips were rerouted between Cornell and downtown by way of Dryden and Hoy roads.

In 2017, TCAT suffered impacts to service as a result of its aging fleet. Twelve buses were past their 12-year retirement age at the beginning of the year. Of seven hybrid diesel-electric buses, five were over 9 years old and subject to expensive and time-consuming repairs. Five buses were retired before the end of the year: three diesel buses over 12-years old, and two older hybrid buses. Eleven buses purchased in late 2016 were not due for delivery until winter of 2018, as it typically takes about 18 months from the time a bus is ordered until its delivery. At the end of 2017, to mitigate bus shortages, TCAT acquired three used buses from other agencies and refurbished them to put into service.

Staff shortages also negatively impacted service. At the beginning of the year, TCAT had 79 bus operators and 12 maintenance staff to include mechanics and bus handlers. That's compared to what should have been a full roster of 85 bus operators and 19 maintenance staff. The number of bus operators dropped to as low as 72 before recovering back to 80 in November. The number of mechanics dropped to 13 in August, but thanks to one hire in December, TCAT finished the year with 14 mechanics.

Missed Trips by Cause - 2017

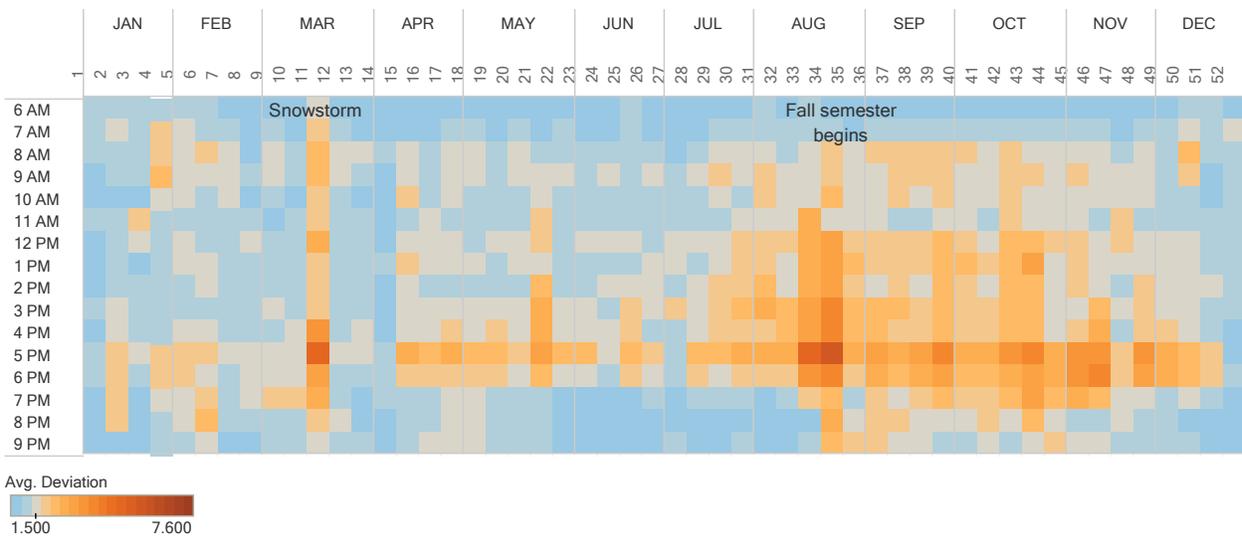


"Other" causes may include traffic delays, accidents, or other failures of the road network. The relatively low number of missed trips in December is largely due to taking three buses off the schedule after Cornell's exam week.

Due to persistent bus and driver shortages at the end of the year, TCAT cut three buses from daily service in the second week of December into January of 2018. Trips were cut on Routes 10 and 82, because of their high frequency (and riders' ability to catch the next bus in a short time frame as opposed to a low-frequency route.)

To be sure, 10 to 60 missed trips is a small fraction of a system that runs between 350 and 1000 trips per day or more than 25,000 a month. Nonetheless, each missed trip is a major disruption to riders, and tends to encourage them to find other modes of transportation permanently.

Average Schedule Deviation by Week and Hour



Increasing congestion slowed service as well. New construction on Green St. and College Ave. frequently closed lanes of traffic and increased traffic.

Fleet

In 2017, TCAT buses logged 1,579,450 miles of service, an average of a little more than 30,000 miles per bus (or the equivalent of 1.2 times around the Earth).

The number of buses and service miles logged were as follows:

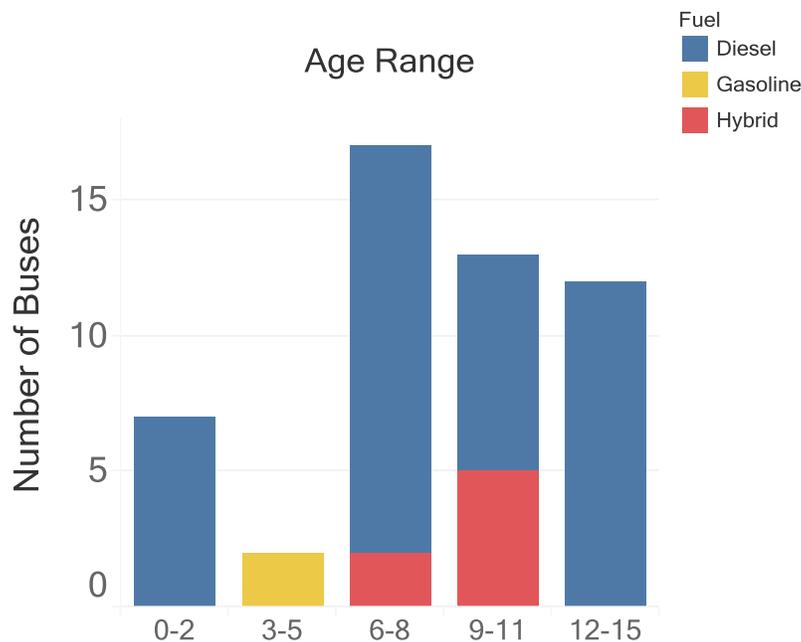
- Five fewer than 20,000;
- 14 between 20,000 to 30,000;
- 22 between 30,000 to 40,000;
- and 10 more than 40,000.

At the beginning of 2017, TCAT’s fleet consisted of 53 buses with an average age of 8 years. This included 51 full-size, 40-foot buses, and two “cutaway” buses – Ford E-350 vans that were converted to 28-foot buses. Of the larger buses, 43 were diesel-fueled, and 8 were hybrid diesel-electric buses; the cutaways are fueled with gasoline.

The Federal Transit Administration establishes a useful life of 12 years on federally funded buses, meaning they cannot be replaced until after 12 years of service. TCAT began 2017 with 12 buses that were past the 12-year retirement age.

Overall in 2017, TCAT retired five buses due to serious mechanical issues, three of which were more

Bus Inventory by Fuel and Age Range



than 12 years old; an 11-year-old diesel-electric hybrid; and one 10-year-old diesel bus.

Late in the year, TCAT was too short of buses to provide scheduled service. Although 11 new buses were on order by fall of 2016, an 18-month lead time on bus orders meant these would not be delivered until February 2018. As a stopgap measure, TCAT purchased and refurbished a used 30-foot bus, and

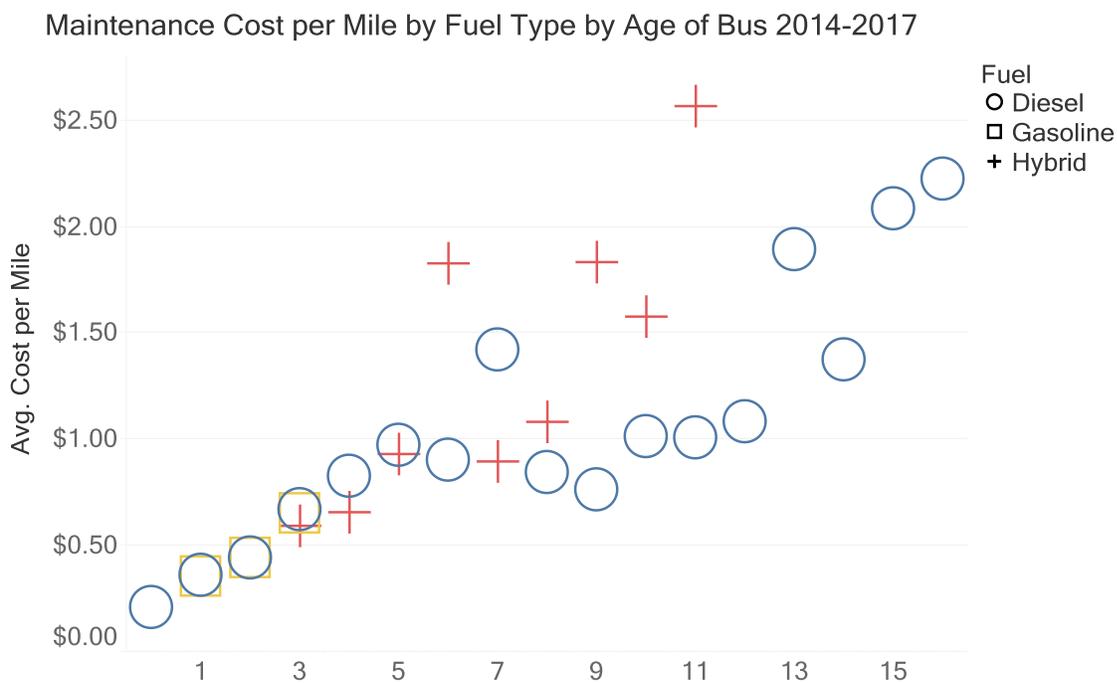
borrowed two buses from Centro in Syracuse. Still, those buses required time for repairs, for equipment installation, and to undergo inspection. These factors delayed the buses from entering service until close to the very end of the year.

TCAT’s fleet at the end of 2017 numbered 51 buses with an average age of 8.7 years. Of those, 41 were 40-foot diesel buses; seven 40-foot hybrid diesel-electric buses; one 30-foot diesel bus; and two cutaways.

Maintenance

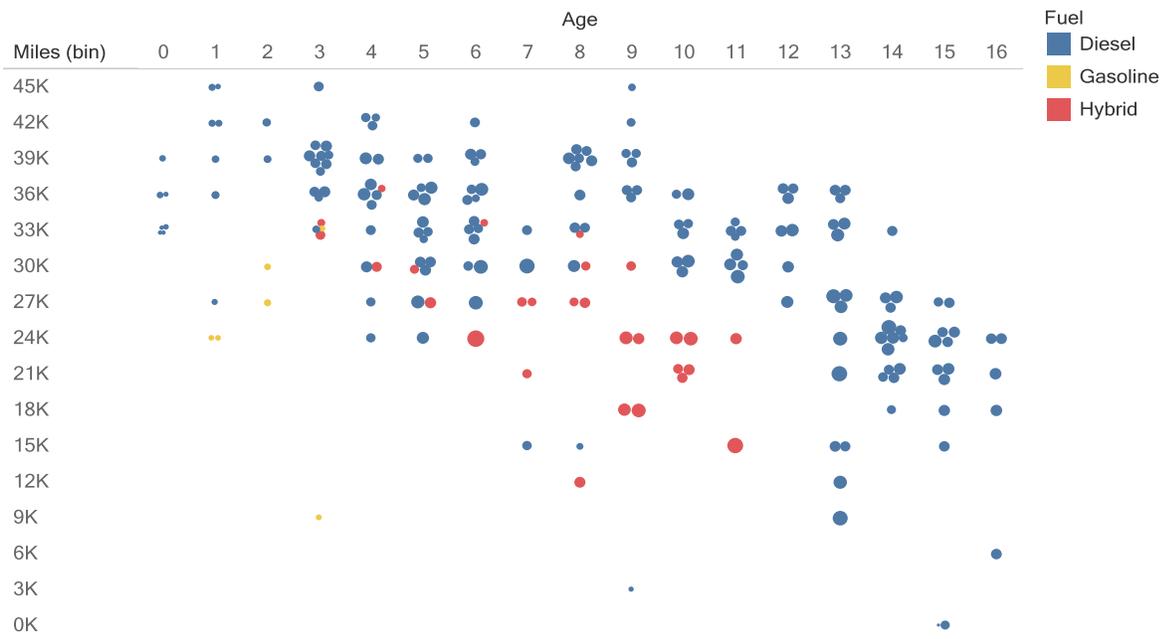
Hybrid diesel-electric buses continued to be a drain on the maintenance department’s time and budget. Diesel buses operated on an average of 258 days, while hybrids operated an average of 224 days. Average mileage for hybrids was 24,576, significantly less than the average mileage of 30,526 for diesels.

The hybrid buses did show a small improvement in fuel mileage; 5 percent among same-age buses or approximately 370 gallons of fuel on a bus that travels 25,000 miles annually.



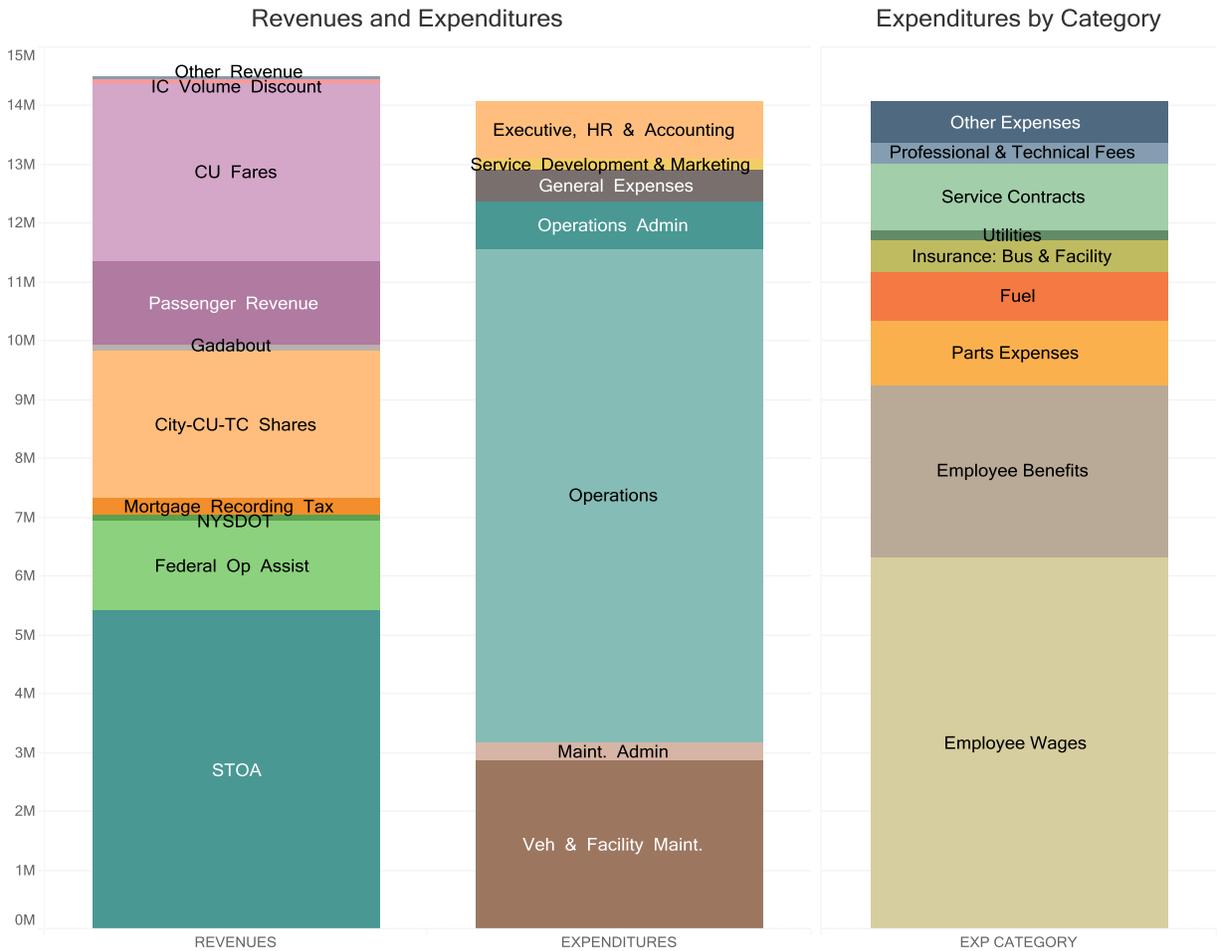
Diesel bus maintenance costs increased at a steady rate for the first five years of service, then remained relatively even at about \$1 per mile until the 12th year of service. At that point, the costs rose quickly, doubling in three years. Hybrid bus maintenance costs per mile increased at the same rate for the first five years and continued to rise at approximately the same rate or faster. TCAT’s fleet did not include hybrid buses that were more than 11 years old at the end of 2017, but internal reports indicate that costs for these buses continue to increase in 2018.

Cost by age and mileage by fuel



Each mark on this chart represents maintenance cost for one bus for a year. The vertical axis represents the number of service miles for the year, and the horizontal axis represents the age of the bus in that year. The color indicates fuel type, and the size of the mark indicates total cost of parts and contracted service for the bus, but does not include labor costs. The general shape of the marks shows that as buses age, they run fewer miles. Increasing size of the marks from left to right shows increasing costs due to age. Increasing size from top to bottom shows higher costs correlated to lower miles of service. The cluster of relatively large red marks at the bottom of the cluster shows poor performance of hybrid buses as compared to diesel as they age past 5 years.

Finances



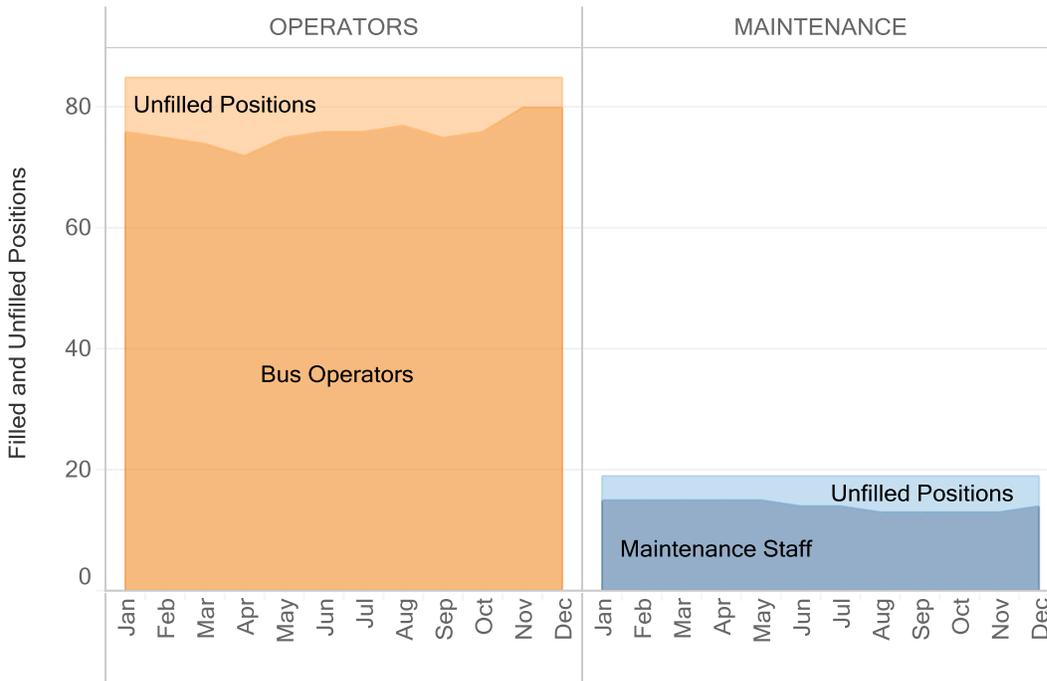
The largest share of revenue came from operating assistance from out-of-county government entities – New York State and to a lesser extent the U.S. government. Fares – passenger revenue, Cornell’s negotiated fare payment for its student and staff passes, and Ithaca College’s volume discount – make up the next part. Other local sources include contributions from TCAT’s local underwriters and mortgage recording tax revenues.

Measuring by departments, TCAT’s operations and maintenance accounted for 88 percent of expenditures. By category, wages and benefits constituted just under two thirds of expenses. Service contracts expenditures, or about 10 percent of TCAT’s operational budget, primarily covers TCAT’s contract with Gadabout for paratransit services.

Human Resources

TCAT has 85 bus operator positions, and 19 vehicle and facilities maintenance positions to include 13 mechanics, three bus fuelers, and three facilities maintenance and custodial staff. TCAT was unable to maintain full staffing levels at any point in 2017. While this represents a cost savings to TCAT, the impact on service is substantial and detrimental.

Bus Operator and Maintenance Staff



Information Technology

In 2017 TCAT implemented a Computer Aided Dispatch/ Automated Vehicle Locator (CAD/AVL) system from Avail Technologies, headquartered in State College, PA. In addition to providing additional driver communication tools and real-time vehicle information to our dispatchers, this system delivers schedule information and periodic vehicle locations. This allows third-party mobile app developers access to our schedules and to real-time vehicle locations and arrival predictions, to enable them to create customer information tools. The CAD/AVL system was implemented in January for TCAT's Winter/Spring service period; we rolled out the public schedule information in August with our Fall service period.

As expected, riders immediately took advantage of real-time information on both the TCAT website and via mobile apps. Three rider apps that were launched in 2017, MyStop, Moovit and Transit, continue to give our schedule and real-time information to passengers. Though no data is available for the MyStop and Moovit apps, Transit reported 7,000 downloads for our system in 2017. Also launched in 2017 is a text message feature which allows the user to text (321-123) at any stop and receive next departure information. This feature is especially useful to those who do not have app-accessible smart phones. According to our data, 95 people used this feature a total of 579 times in 2017 prior to our installation of bus stop signs that advertise this service.

Communications & Marketing

TCAT aims to keep TCAT riders, employees and other stakeholders abreast of accurate and timely news through a variety of media and outreach events. TCAT believes transparency is a critical component for customers, employees, decision makers and others to use, understand and support their local transit agency.

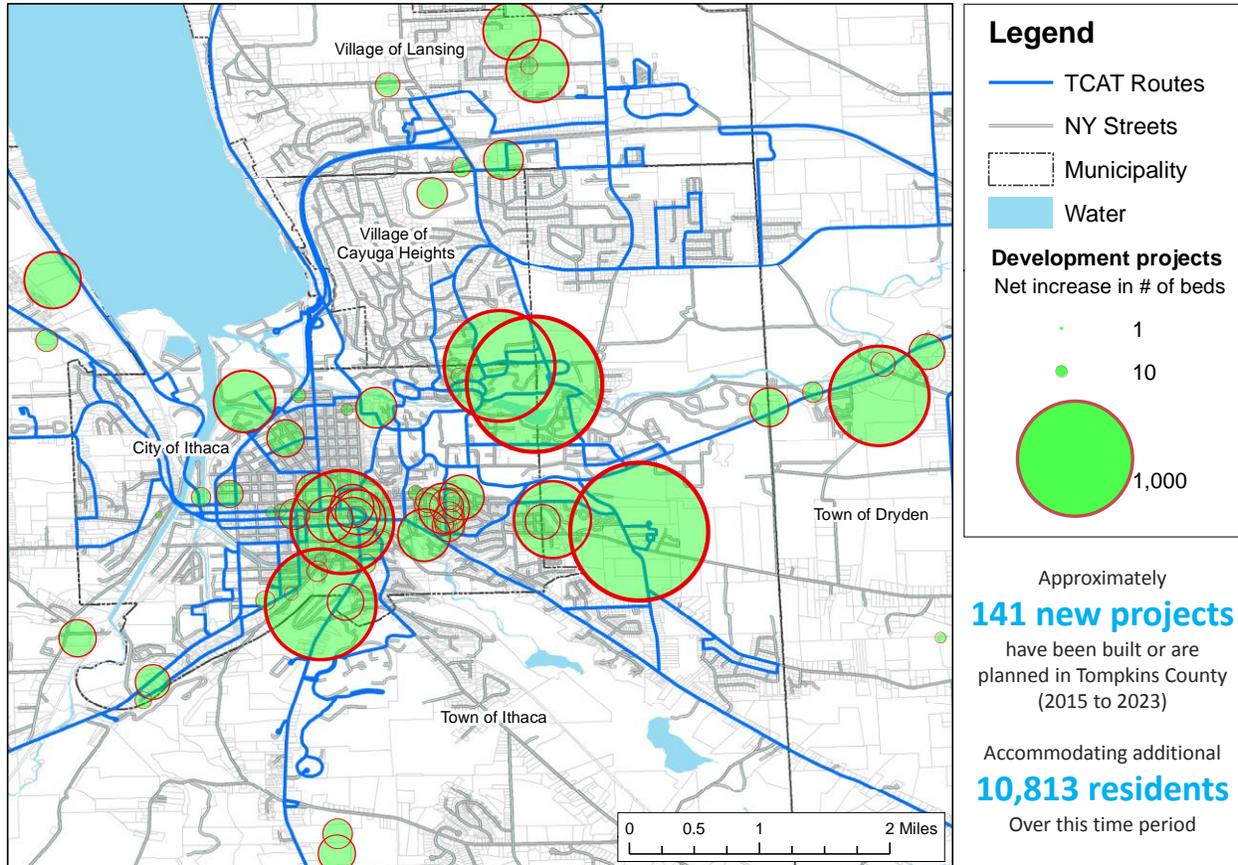
- In 2017, TCAT's Communications and Marketing team gathered photos, wrote stories and designed 15 internal employee newsletters named "The TCAT Times" to keep its workforce up to date about new hires and in the loop about other company news.
- The department issued 46 press releases and/or alerts regarding detours, service changes, service disruptions including winter Storm Stella in mid-March, as well as the launch of real-time information in late August. The department coordinated with the media on several news stories, including the promotion of Scot Vanderpool to General Manager in August 2017.
- For the sixth year in a row in 2017, the Communications and Marketing team participated in the semi-annual Streets Alive! event in which TCAT parked bus in the city's Fall Creek areas on April 30 and the city's Southside on Sept. 17 for staff to show event-goers how to use the bike rack and to answer any TCAT-related questions. To inform a variety of demographics about TCAT, the team also conducted outreach at Enfield Elementary School on June 3, Dewitt Middle School on June 19, Cornell University student check-in on both August 18 and 21, and McGraw House on Sept. 28.
- TCAT's part-time Marketing Assistant/ Graphic Artist designed three TCAT Schedules and Service Guides for winter/spring, summer, and fall service, and set up web pages showing schedules, maps and summary information. In addition, the artist created posters and other passenger information materials to educate the public about service changes and real-time technology. The artist designed advertisements for local print media, as well as for publications produced by local schools, such as yearbooks for Newfield, New Roots schools, and the Ithaca City School District Fine Arts Booster's printed program. The artist also finalized the design for bus stop signs as part of TCAT's project to simplify and clarify its bus stops system-wide.
- In addition, the Marketing Assistant, who is also Paratransit and Half-Fare Coordinator, processed 116 Americans with Disabilities Act (ADA) application as well as 72 half-fare applications.

Future Challenges

Over the last decade, Tompkins County's permanent population has grown 5 percent from 99,997 in 2006 to 104,926 in 2015 while the Cornell enrollment grew over 11 percent from 19,639 to 21,904 in the same period. In addition, Tompkins County's economy added 7,800 jobs between 2006 and 2015 and the number of in-commuters from surrounding counties is estimated at about 15,000 per day. The map below shows some of the many recent construction projects (adding over 1,800 beds) and those planned for the next five years (potentially adding another 9000+ beds). These long-term growth and development patterns have increased congestion, forcing TCAT to lengthen trip times, which, in turn, increases costs. While grappling with these issues, TCAT has developed a deep understanding of the

connection between land use and transportation; in particular, we are working to promote the concept and benefits of transit supportive development (TDS) among developers.

Development Projects in the Ithaca Area 2015-2023



TCAT’s central challenge in the next few years is to plan, to find funding, and to grow a larger system to meet increasing demand that is being driven by Tompkins County’s population and job growth. In turn, TCAT will require a larger facility to accommodate a bigger fleet and more employees needed to keep pace with demand.

In the interim, TCAT staff and the TCAT Board of Directors are currently examining how best to overcome the space constraints of its 25-year-old facility. Additionally, to bolster its fleet, TCAT leaders have been creative by looking outside normal capital funding channels to pay for buses. Additionally, TCAT has been combing the marketplace in an attempt to purchase used transit vehicles that are in good condition and have remaining useful life. Finally, TCAT’s human resources department continues to work in earnest to ensure to recruit and retain qualified staff to meet ridership demands now and into the future.

TCAT is excited about the future and looks forward to working with riders, planners, developers, and other stakeholders to make transit in Tompkins County the best it can be!