



CDTA COMMITTEE AGENDA
Strategic and Operational Planning Committee
Thursday, August 20, 2020 | 12:00 PM | Microsoft Teams Meeting

Committee Item	Responsibility
Call to Order	Mike Criscione
Ascertain Quorum	Mike Criscione
Agenda Approval	Mike Criscione
Approve Minutes of Thursday, June 18, 2020	Mike Criscione
Consent Agenda Items	
• No Items Scheduled	
Administrative Discussion Items	
• Electric Bus Pilot	Chris Desany
• September 2020 Service Changes	Ross Farrell
• River BRT Update	Ross Farrell/Jeremy Smith
• FLEX Fare Pilot	Jon Scherzer
Executive Session	
• No Items Scheduled	

Next Meeting: Thursday, September 24, 2020 at 12:00pm via Microsoft Teams and 110 Watervliet Ave.

Adjourn

** Indicates Material (Or Additional Material) Will Be Provided at Meeting*

Capital District Transportation Authority
Strategic and Operational Planning Committee
Meeting Minutes – June 18, 2020 at 12:00pm; via Microsoft Teams

In Attendance: via MT- Jayme Lahut, Mike Criscione, Dave Stackrow, Pat Lance, Denise Figueroa; at 110 - Carm Basile, Amanda Avery, Mike Collins, Chris Desany, Lance Zarcone, Jaime Watson, Allie Schreffler, Jon Scherzer, Chad Heid, Vanessa Salamy; via MT –Sarah Matrose, Thomas Guggisberg, Stacy Sansky, Brooke Simoncavage

Meeting Purpose

Regular monthly meeting of the Strategic and Operational Planning. Committee Chair Mike Criscione noted that a quorum was present. Minutes from the May 21, 2020 meeting were reviewed and approved.

Consent Agenda Items

No items scheduled.

Administrative Discussion Items

July 2020 Service Changes

- Ross Farrell gave a presentation and facilitated discussion on the July 2020 service changes. As we have been discussing over the last several months, the initial stages of the pandemic caused ridership to decrease by 67% (to about 20,000 riders/weekday). We have since experienced gains that have brought us back to over 30,000. STAR ridership was likewise down 67%, and those customers are also gradually returning.
- The goal of the July 12 changes includes investing in higher frequency and span on our busiest corridors, avoiding loads of 15-20 passengers whenever possible, and fast forwarding some of the TDP concepts we were previously planning on implementing.
- As the region starts to reopen, the plan is to accommodate up to 40,000 daily riders using only existing resources. Most trunk routes will be at or above prior levels. Several routes will have reallocated service (change of frequency, span, or short turning). Several other routes will remain at reduced schedules or not in operation. Details were given in the presentation.
- There are many unknowns to which we must pay attention in the coming weeks, such as what is happening with schools and universities, State Worker transportation, and the reintroduction of fares.

Barrier and Other Operator Considerations

- In the latest in a series of updates, Lance Zarcone gave a presentation and facilitated discussion on some of the precautions we are taking to protect our employees and customers. We have implemented several measures in the garage/shop and operator areas, including making available plenty of PPE, upgrading cleaning schedules, and stocking maintenance vending machines.

- We implemented rear door entry/exit at the beginning of April, while maintaining 15-20 passengers per bus. We could do this using a series of incremental service updates made over the last few months and inserting “stub” buses where necessary.
- The subject of driver barriers is an important topic nationwide. We have been reviewing best practices at the state and national level, communicating with our peers, consulting with vendors, and evaluating our own in-house capabilities. There are several different bus configurations we operate, so this makes developing a standard design difficult. We hope to have barrier installation well under way by August and would like to see some progress on this before we reintroduce fare collection at the front door.
- We also discussed the need to move as many people to Navigator as possible, which requires addressing unbanked customers. Several strategies were considered, such as more partnerships with retail outlets, and working with social service agencies in new and creative ways.

Executive Session

No items scheduled.

Next Meeting

Thursday, August 20, 2020 at 12:00pm via Microsoft Teams and at 110 Watervliet Ave.

Electric Bus Pilot Program

*Strategic and Operational Planning Committee
August 20, 2020*



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Electric Bus Pilot - Overview

- CDTA's first four electric buses were acquired from New Flyer in September 2019
- The board approved a contract with Center for Transportation and the Environment (CTE) for a testing plan and data monitoring in December, 2019
- Electric Bus Fixed Route Service began on January 6, 2020
- Hardware was installed on February 11, 2020
- The purpose of the pilot is to evaluate the viability of New Flyer XE40 buses to replace conventional 40-foot buses



NEW FLYER OF AMERICA



**CENTER FOR TRANSPORTATION
AND THE ENVIRONMENT**



Testing Pilot with CTE

- Planning meetings were held between December and January, 2020
- First monthly testing plan was delivered on January 30, 2020
- Testing began February 11, 2020
- First KPI Report coming soon



CENTER FOR TRANSPORTATION
AND THE ENVIRONMENT



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Buses

Four New Flyer Xcelsior XE40 buses

- 466 kWh capacity Energy Storage System (ESS)
- Advertised Maximum Range of 225 Miles
- Officially in service as of January 6, 2020
- Supported by New Flyer Connect system



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Chargers

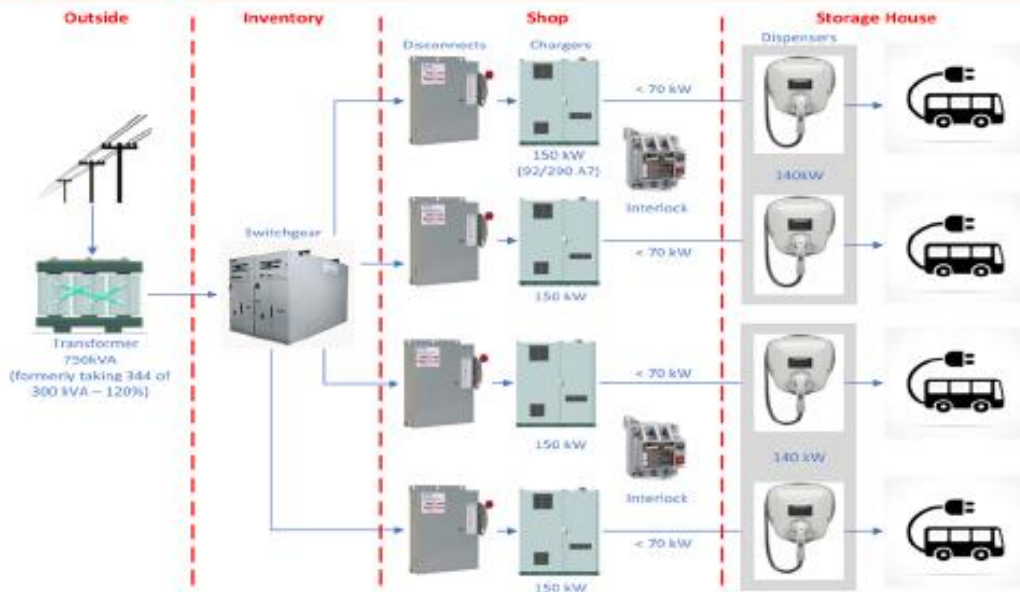
Four Siemens RAVE Chargers

- Acquired in August, 2019
- 150 kW capacity
- Supported by Siemens MindSphere system
- Limited by National Grid to 70 kW and maximum two chargers at a time



CDTA

Charging Flowchart



CDTA

Viriciti Data Hubs

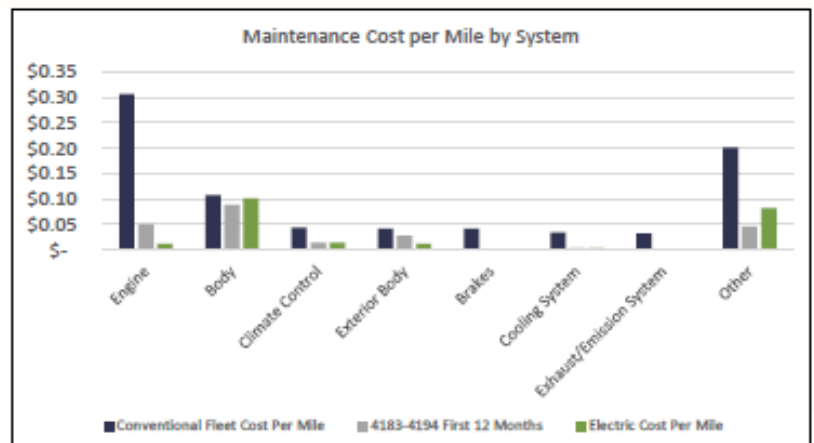
Four Viriciti data hub devices

- Installed on February 11, 2020
- Used as a third party check on the accuracy of New Flyer and Siemens data
- Collect a variety of metrics:
 - Energy regeneration, energy idled, state of charge, odometer, etc.
- Supported by the Viriciti portal



Maintenance Cost Per Mile

Conventional Fleet Jan-July 2020	\$0.81
4183-4194 (Acquired March 2019) First 12 months	\$0.23
Electric Fleet Jan-July 2020	\$0.22 (99 th Percentile)



Fueling Cost

Calculating “fueling” costs is more complicated for electric vehicles than for diesel vehicles

- National Grid classifies the Albany garage as SC-3 Secondary, meaning our bill is derived from varying hourly supply rates and our peak demand
- Our bus chargers are not separately metered, meaning we have to estimate charging costs
- Getting an accurate estimate of bus charging costs requires cross-referencing National Grid and data from the chargers

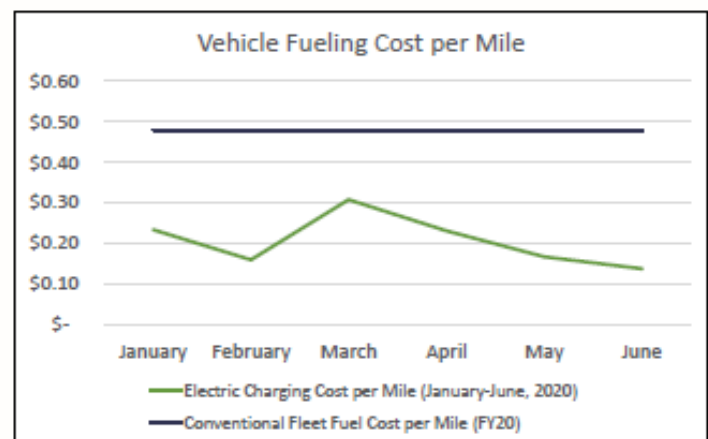
SERVICE PERIOD	Feb 5 - Mar 5	NUMBER OF DAYS IN PERIOD	29	METERING TYPE	Secondary
RATE	Electric SC3	VOLTAGE DELIVERY LEVEL	0 - 2.2 kv		
TRANSFORMER OWNERSHIP					
Customer					433.48
Demand	10.83	x	451.9 kW		4,894.08
SBC	0.005491	x	187195 kWh		1,027.89
Legacy Transition Chrg	0.00395	x	187195 kWh		739.42
Transmission Rev Adj	-0.00189	x	187195 kWh		-318.38
RDM	0.89	x	451.9 kW		402.19
Tariff Surcharge	1.0101	%			72.53
				Total Delivery Services	\$ 7,253.21
Supply Services					
supplier National Grid					
Hourly Electricity Supply					4,644.75
Merchant Function	0.00042567	x	187195 kWh		79.68
EGRM	0.004694	x	187195 kWh		869.10
Capacity Tag Charge	0.11798	x	208.97 kW		24.65
Capacity Reconciliation	-0.05933	x	208.97 kW		-12.40
Tariff Surcharge	1.0101	%			56.51
				Total Supply Services	\$ 5,651.29

Albany garage bill calculation from March, 2020



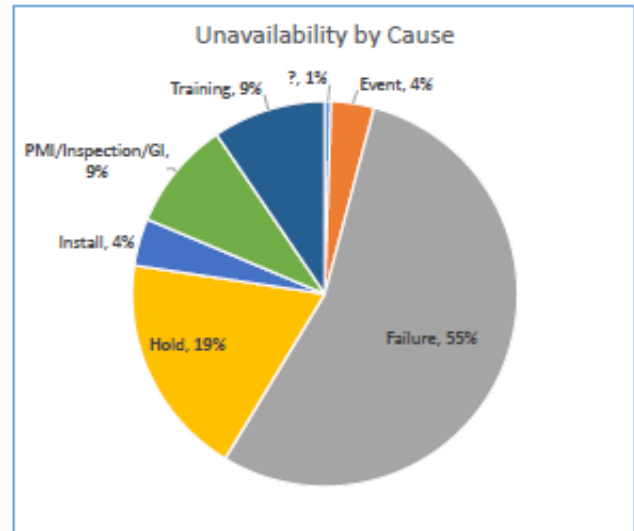
Fueling Cost Per Mile

- Fueling cost per mile for the electric buses should remain reliably cheaper than that of the conventional fleet
- Diesel cost per mile in FY20: \$0.48
- Electric cost per mile, January-June: \$0.20



Availability

- Total availability: 88% (Same as conventional fleet)
- Some unavailability was extended due to part orders
 - High voltage interlock - 13 days
 - High voltage cable - 10 days
 - Lower Auxiliary heater - 8 days
- Significant time spent on training and holds for hardware/software installations



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Range Performance

Month	Energy Used in Service (kWh)	Miles Driven in Service	kWh/Mile	Average Speed	kWh/hour	Range (Hours)	Range (Miles)
January	11,974	4,302	2.78	13	36.1	9:41	126
February	18,049	6,626	2.72	12.8	34.9	10:00	128
March	15,462	6,811	2.27	12.2	27.7	12:36	154
April	13,555	5,875	2.31	11.4	26.3	13:17	151
May	12,079	6,242	1.94	11.1	21.4	16:19	181
June	18,811	9,154	2.06	10.5	21.7	16:07	170
July	15,529	8,073	1.92	12.6	24.2	14:27	182
Total	105,460	47,083	2.24	11.8	26.4	13:14	156

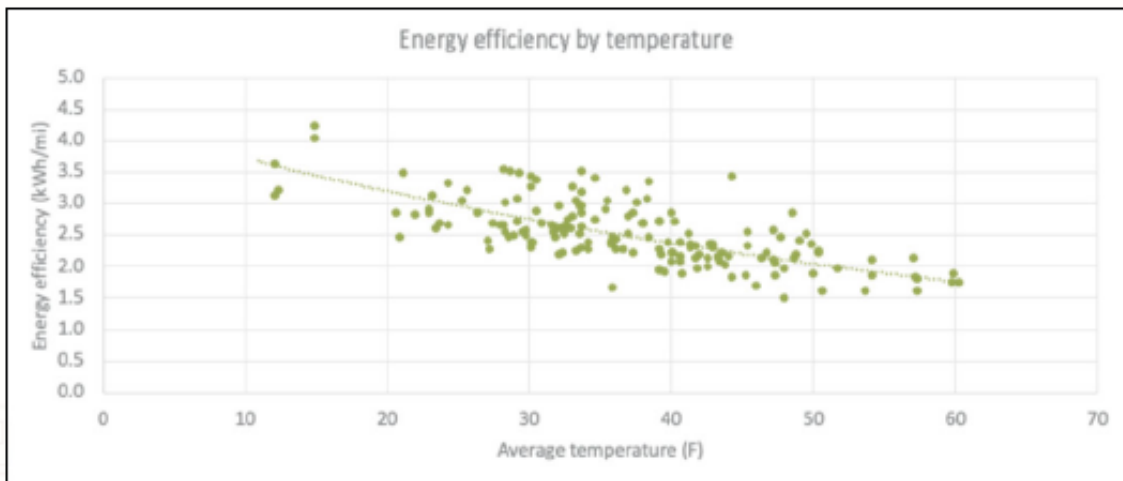
- Range based on running a vehicle from 90% charge to 15%
- ~Half of fixed route vehicles work days are 10 hours or less. 90% are 16 hours or less
- The longer an electric bus can run without charging, the more realistically it can replace a conventional bus 1:1



Performance Factor - Temperature

Temperature is a critical factor to efficiency for buses with electric heating

CTE will provide temperature analysis



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Performance in Cold Weather

- Connect 360 provides daily performance reports
- This reports demonstrates performance in cold weather on Route 6. More energy was spent on heating than driving
- 3.5 kWh/mile, 38 kWh/hour
- Max range of 117 miles, 11 hours
- Fueling cost:
 - \$0.27 per mile
 - \$2.85 per hour



Performance in Good Weather

- This reports demonstrates performance under nearly ideal circumstances, again on Route 6
- No heating used. Some air conditioning used
- 1.45 kWh/mile, 18 kWh/hour
- Max range of 274 miles, 22 hours
- Fueling cost:
 - \$0.10 per mile
 - \$1.21 per hour

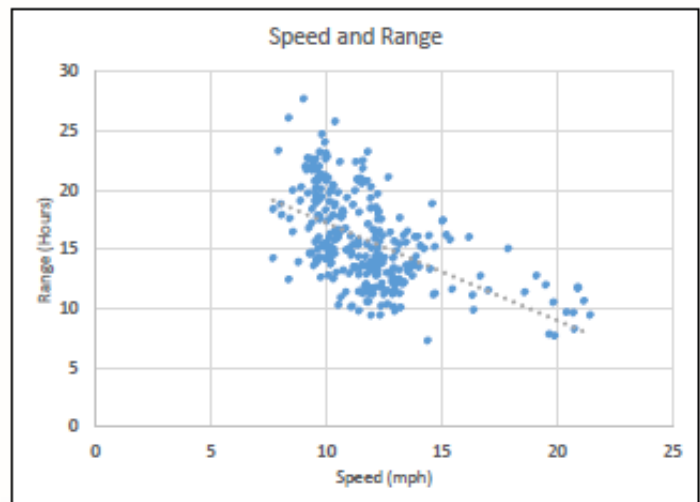


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Performance by Route – June-July, 2020

Urban core routes, such as the 12, 1 and 100, provide excellent range and the most benefit to the public from the electric buses' reduced noise and air pollution

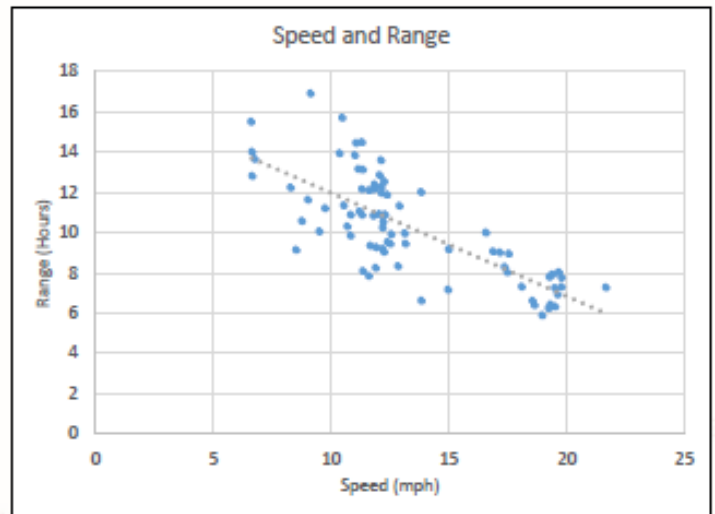
Route	Average speed	kWh per Mile	kWh per hour	Range (hours)	Range (miles)
450	20.4	1.76	36	9.7	198
286	14.1	1.92	27	12.9	182
214	13.0	1.92	25	14.0	182
737	15.6	1.57	24	14.3	223
10	16.0	1.47	24	14.8	237
7	10.5	2.11	22	15.8	166
183	10.2	2.10	22	16.2	166
87	9.7	2.13	21	16.9	164
80	10.6	1.84	20	17.9	190
11	10.1	1.90	19	18.1	184
12	11.7	1.55	18	19.2	225
1	9.7	1.87	18	19.3	187
100	8.1	2.21	18	19.5	158
Total	11.4	1.87	21	16.4	187



Performance by Route – January-February, 2020

In winter, efficiency becomes restrictive enough that certain routes should be avoided altogether

Route	Average speed	kWh per Mile	kWh per hour	Range (hours)	Range (miles)
233	18.7	2.46	46	7.6	142
114	13.3	3.31	45	7.8	106
10	12	3.15	38	9.3	111
18	12.3	2.81	35	9.9	124
6	9.9	3.35	33	10.5	104
12	12	2.54	30	11.5	137
7	10.6	2.84	30	11.6	123
1	8.8	3.35	30	11.8	104
100	6.9	3.74	26	13.5	93
Total	13.0	2.73	36	9.8	128



Memorandum

August 20, 2020

To: Strategic and Operational Planning Committee
From: Christopher Desany, Vice President of Planning and Infrastructure
Re: September 2020 Service Adjustments

Background

On September 6th, CDTA will operate an updated service plan that will be in effect until the rollout of the River Corridor BRT in November. Much of the system will remain unchanged except for the resumption of school/university service, schedule adjustments to select routes, and the possible rollout of services for State employees.

School & University Services

Each year in late summer, our route system expands to accommodate ridership from high schools, middle schools, and colleges/universities. This year is no different, although there are adjustments in routings and schedules to accommodate each institution's unique reopening plan. We must also design these services to maintain social distancing. In summary these services include:

- University at Albany – return of Route #11 and increase in frequency of Route #12
- RPI – return of Route #286 and new Route #288 for off-campus student housing
- Skidmore College – increased frequency of #452 and route modification to off-campus student housing
- Redeployment of tripper services for Albany Central School District
- Return of services for private/parochial schools

OGS State Employee Transit

In July, a contract was finalized between CDTA and the Office of General Services to provide free access to State employees who park in OGS lots outside downtown Albany. It is unknown when the access (and corresponding service) will begin due to the slow return of the State workforce. CDTA is prepared to have buses and operators available when the remote lots reopen.

Other Changes

CDTA will adjust select routes to better match service levels with demand. These changes include:

- Sunday service on Route #190 will be suspended due to low ridership and availability of FLEX microtransit as alternative
- Reduction in Sunday frequency of Route #1 and Route #7

Routes Impacted: 21

- Albany County – #1, #7, #12, #190, OGS Routes (#701-#704) School Trippers (#800-#809)
- Rensselaer County – #286, #288
- Schenectady County – None
- Saratoga County – #451, #452

Copy: Chief Executive Officer

BusPlus Blue Line River Corridor BRT

Project Update

Strategic & Operational Planning Committee
August 20, 2020



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Project Overview

CDTA's 2nd BusPlus line

- part of vision for 40+ miles of BRT

River Corridor

- Dense development with multiple downtowns and village centers
- Neighborhoods in revitalization
- 6 municipalities, 3 counties

Corridor Ridership

- Over 3.1 million rides in FY20
- 20% of system



Project Overview

\$42.5M in capital & construction

- Federal Transit Administration via Small Starts and Bus & Bus Facilities
- Empire State Development via Upstate Revitalization Initiative
- NYS Department of Transportation
- City of Albany & City of Troy

\$3.0M+ per year in operations

- Federal Highway Administration via CMAQ grant



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Service Plan



Service Improvements

Faster Service / Reduced Travel Times

- 20% to 40% depending on where and when traveling
- Due to limited-stop, no transfers, traffic signal replacement, TSP, and queue jumpers

Transfers Eliminated

- For riders traveling through downtown Albany & downtown Troy
- Eliminates inconvenience and additional waiting time

Higher Frequency

- Matching level of service with demand
- Combined frequency of local and BRT



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Service Plan

BusPlus Blue Line

- Limited stop
- Route #922 & #923 – branches at north and south ends
- Hours of operation: 4:00a to 2:45p
- Weekday Frequency
 - Every 7 to 12 minutes majority of day
 - Every 15 to 30 in early morning & late evening
- Weekend Frequency
 - Every 12 to 15 on Saturday; Every 15 to 20 on Sunday
 - Every 30 minutes late night



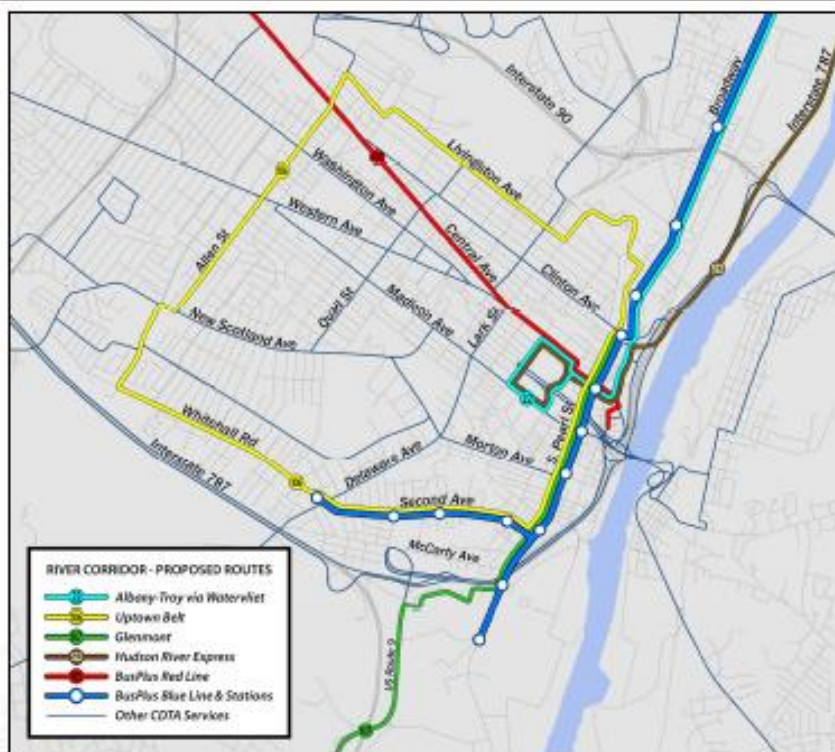
Service Plan

Adjustment to Local Service

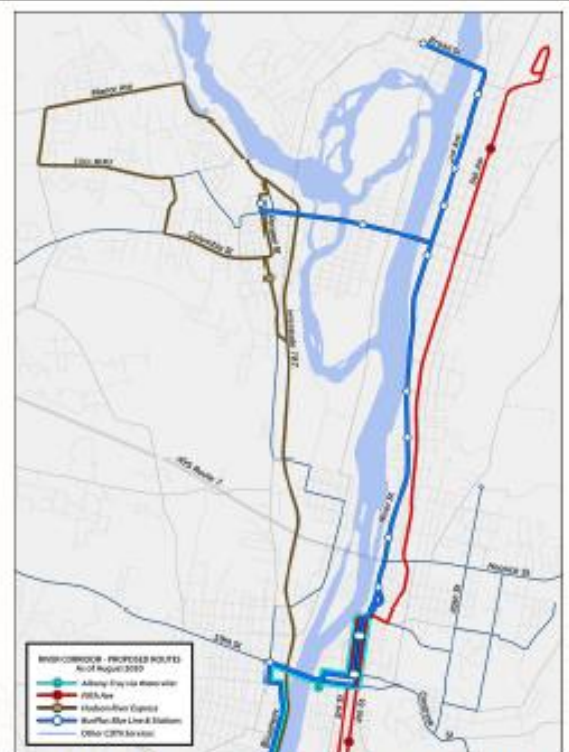
- Route #6 reduced frequency and interlined with Route #138 to create new belt **Route #106**
- Route #7 reduced frequency and rerouting to create new Route #107
- Route #22 slight reduction in frequency
- Route #80 will be eliminated with Route #85 moved to cover 5th Avenue in North Troy / Lansingburgh
- Route #716 remains suspended
- Route #522 reinstated for trips between Cohoes & downtown Albany



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Albany / Menands



Watervliet / Troy / Cohoes / Waterford

Annual Operational Costs

\$3.0+ million per year

- Based on operators, bus hours, mileage, and maintenance from service plan
- Approximately first 1.5 years paid for by CMAQ grant

Summary

- Personnel (Wages + Benefits) = \$2.2+ million per year
- IT & Facilities Maintenance (ex. TSP, shelters) = \$0.2 million per year
- Fuels, parts, materials = \$0.5 million per year
- Contingency = \$0.1 million per year

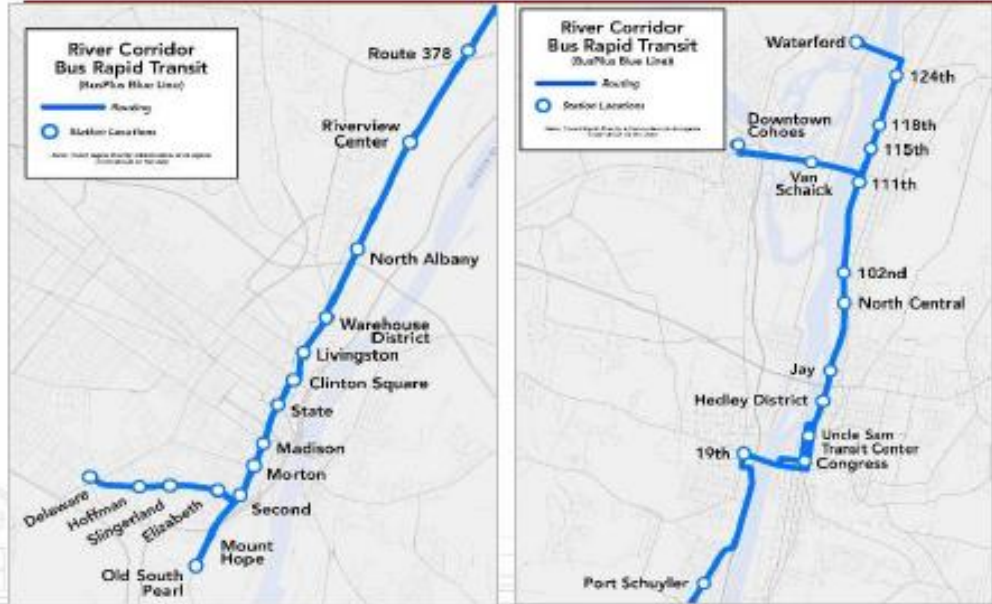
Revenue Service in November



Construction Update



River BRT – Construction Update



- \$42,513,790.00
- 31 Stations – 60 sites
- 16 Mile Long Corridor
- Waterford, Cohoes, Troy, Watervliet, Menands & Albany
- Site Work & Signals, Shelters, Troy Garage Expansion, TSP, Buses

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River BRT – Construction Update

SITWORK

Contractor: Callanan Industries

Remaining Location	Completion Date
Phase II	
Congress (northbound)	August 14
Livingston	August 21
Phase III	
Headley	September 21
Old South Pearl	October 2
Delaware	October 15
Route 378	October 15
Warehouse	October 15
Menands Park & Ride	November 15



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River BRT – Construction Update

SITWORK



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River BRT – Construction Update

SHELTERS

Supplier: Duo-Gard Industries, Inc.
49 shelters installed by rollout

Amenities:

- Benches/Lean Rails/Bike Racks/Garbage Cans
- Green Shelter w/solar wall (4th & Congress)
- Heated sidewalk/Heated Shelter/Solar/USB chargers – 18 sites

Remaining Location	Completion Date
Jay Street – Capital Roots (northbound and southbound)	Fall 2021
Riverfront Station	Spring 2021
4 th and Fulton	November 2020
80 Broadway – OGS (northbound and southbound)	Fall 2021

* Pylon availability is a challenge



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River BRT – Construction Update

SHELTERS



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River BRT – Construction Update

TROY GARAGE

Contractor
U.W. Marx

Scheduled Completion
October 2020

Contract Value:
\$6.5M

Storage Expansion
(10-15 buses, 8,260 ft²)

Shop Expansion
(4 Lift bays, 2,500 ft²)



River BRT – Construction Update

TROY GARAGE



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River BRT – Construction Update

VEHICLES

Gillig Buses

- First bus arrive 8/23 – Service Ready 9/14
- Final bus arrive 9/27 – Service Ready 10/17

Carmody Ford – Non-Revenue Vehicles

- 3 New Shelter Vehicles (1BRT Specific)
- Estimated delivery delayed
- Delivery now 9/22
- Parts retrofit – service ready 10/1



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River BRT – Construction Update

POST-ROLLOUT

Sitework

Phase IV (to be bid)
Jay St. & 80 Broadway

Shelters

Green Shelter at 4th & Congress
Jay St. & 80 Broadway
Riverfront and 4th & Fulton
Possibly some pylons

Troy Garage

Locker rooms and
bathroom upgrades

Vehicles

Additional buses



Memorandum

August 20, 2020

To: Strategic and Operational Planning Committee

From: Jonathan Scherzer, Director of Marketing

Re: *FLEX* Pilot Adjustments

Background

Our *FLEX* microtransit pilot program has been operating since January 2020. *FLEX* provides service in a zone covering Colonie, Guilderland, and Latham. This service offers flexible routing using real-time matching of demand and supply, extending the accessibility of our service. Customers use a mobile application (they can also call) to request rides, which are delivered in CDTA-operated, shared-use vehicles. During the pilot phase, service has been free of charge.

FLEX has served more than 10,000 customers since its launch. The busiest times for *FLEX* rides are standard commute times between 8am-10am and 4pm-6pm. The most popular locations include Target Center (Northway Mall), Crossgates Commons, and Star Plaza in Guilderland. The busiest location is our Colonie/Wolf Road BRT Station as it provides many connection opportunities.

Operations

We continue to make changes to our route network in response to regional needs and have reduced service on the three main routes that operate in the *FLEX* zone. We have seen a small uptick in ridership as we have resumed more services. The next step in the pilot is to install fareboxes on *FLEX* vehicles to assess fare collection and to integrate with our CAD/AVL system. This will also provide real time account balance updates and data transfer back to our central system for reporting.

FLEX Fares

The suggested price point for *FLEX* service is targeted between the cost of shared ride hailing and fixed route bus service. We are looking at \$3.00 for a ride within a distinct zone. We would develop a discounted 10-trip product to foster loading of funds onto *Navigator* fare products. Most other systems are charging between \$1.00 and \$2.00 more than the cost of a conventional fixed route ride.

We would like to roll out a *FLEX* fare as a pilot for six months once fareboxes are installed and products are available. This will identify customer use of service while including fare payment.

Next Steps

- Determine best approach for integrating *FLEX* into our fare structure
- Develop the education and marketing plan to support introduction of *FLEX* fares
- Develop pilot testing strategy for additional *FLEX* service zones that come online.

Copy: Chief Executive Officer
Mobility Manager



CDTA Fare Structure (for reference)

Base (cash) fare - \$1.50

\$2.00 for BusPlus

\$2.50 for STAR

Basic Structure

“Pay As You Go” smart card ride is \$1.30 for first three rides (fixed route and BRT), fourth and up are free for the rest of the day.

Smart card half fares is \$0.65 for first three rides (fixed route and BRT), fourth and up are free for the rest of the day.

“Frequent Rider” smart card monthly pass is valid for 31 days from the first day of use. Half fare cost for frequent rider option will be \$32.50.

STAR

All STAR customers are required to obtain a picture ID smart card. *Navigator* payments will be offered through the Trapeze scheduling system at a later date.

Northway Xpress

Stored rides are \$4, \$5, and \$7 for zones 1-3 (respectively)

NX Frequent Rider product is \$110, \$125, and \$170 for zones 1-3 (respectively)

FLEX On Demand

\$3 per ride within an individual zone *

10-trip product for \$25.00 *

Mobile ticket fare pricing is the same as smart card fares.

Policies

CDTA half fare identification (smart card) must be used to purchase or use half fare products.

CDTA issued identification (smart card) used for STAR service.

Fees

Lost/Damaged card - \$2

* Indicates pilot pricing