
MEMORANDUM

TO: Jason Espie, Mike Murphy, Jaunt
FROM: Logan Patterson, Taylor Cox, Randy Farwell, Benesch
SUBJECT: Jaunt Service Alternatives Summary
DATE: November 12, 2024

This memorandum documents the assumptions and operating requirements associated with service concepts proposed to optimize existing operations by leveraging new service models to increase efficiency, cost effectiveness, and user access. This memorandum discusses the first phase of service analysis and concept recommendations for services for Jaunt to pilot.

SERVICE CONCEPTS

The focus of this study is identifying concentrations of mobility need in Crozet, Greene County, and Americans with Disabilities Act of 1990 (ADA) complementary paratransit service in the existing ADA service area. Through coordination with staff and the project team, the following scenarios were examined and are described. The concepts include service scenarios to address localized and commuter mobility needs in Crozet; a concept to serve localized mobility needs in Greene County; and an application of a microtransit operating concept to the ADA paratransit services within the existing Urbanized Area (UZA) complementary paratransit ADA service area. All service concepts envision use of Jaunt drivers and vehicles and introduce use of a microtransit cloud-based software-as-a-service (SaaS) platform to manage operations through a licensing agreement with a SaaS vendor.

Where microtransit service is discussed, the recommended service concept will operate as a mobility-for-all service. It will respond to customer requests and provide a shared-ride solution. Customers may request a ride using a mobile application, or a web portal, or by calling the Jaunt call center. The service is designed to be equally available to the general-public and persons with disabilities as described in Section 7.1 of the Federal Transit Administration (FTA) Circular describing dial-a-ride demand responsive service type provisions of the ADA. Therefore, persons who qualify for service under ADA, will continue to be served by Jaunt under an ADA compliant microtransit service model.

TRIPS WITHIN THE URBANIZED AREA (UZA)

Within the UZA, Jaunt would use the SaaS platform to provide ADA mobility services to ADA eligible residents. Jaunt would operate Jaunt vehicles with Jaunt drivers. The SaaS will manage the trip requests and service delivery. Service requests can be made through a mobile application, a web portal, or by calling the Jaunt call center. Based on the user profile, the SaaS will assign trips recognizing the mobility status and assistance requirements for each rider. The associated changes

for these customers would include the ability to request service in real-time using a smartphone app, a web browser, or calling the customer call center. The service would serve same day requests with a target 30-minute pick-up response time window. The service model would apply to ADA eligible riders for travel within the ADA service area. Riders would be able to schedule trips in advance as well as in real-time based on operating policies to be adopted during the service deployment period. Note, this ADA service concept would only serve ADA-eligible riders within the UZA.

TRIPS OUTSIDE THE URBANIZED AREA (UZA)

Outside of the UZA, the microtransit service model would apply to the general public and ADA eligible persons. The proposed microtransit solution would allow users to request a ride within a 30-minute pick-up response time window. Allowances for pre-schedule trips (not immediate) would be permitted under certain conditions. Users will have the option to request rides on a smartphone app, a web browser, or by calling and speaking to the call center. Services outside the UZA would include localized trips as well as travel between the UZA and non-UZA communities within the Jaunt service area where designated. This service would commingle ADA-eligible riders and the general public and from the user profile, recognize riders who require additional assistance when assigning trips. The SaaS would be used to facilitate Jaunt Circulator and Link services, thus affording a more immediate request and response operating model associated with microtransit. Further, the operating concept introduces greater operational flexibility, using algorithms when assigning trip requests to vehicles to fulfill the service request. The operational flexibility and the algorithmic weighting of operating objectives will optimize service solutions in real-time during the operating day, thus yielding more efficient and cost-effective service.

RESTRUCTURING OF SERVICE CONCEPTS (GREENE AND CROZET)

The proposed mobility concepts considered redesigning and simplifying fixed route commuter services (Jaunt Connect). This includes making routes serve a more direct alignment and using microtransit (Jaunt Circulator) to expand the service catchment area for riders to access service. The service concepts developed provide ADA compliant localized mobility curb-to-curb anywhere within a defined service zone. Persons requiring additional support will be provided with a service that accommodates their needs. Travel outside the zone will be facilitated with a connection to the commuter bus (Connect) for trips to/from Charlottesville (during times the Connect operates). For example, a rider may request a local trip from home to the nearby shopping center. They may also request a ride outside the zone which may involve a trip from home to a designated bus stop to ride the Connect commuter bus to get to Charlottesville. The concepts also include service between one's home in the service zone and Charlottesville, thus supporting the Jaunt Link services using the microtransit SaaS and service model.

The microtransit SaaS uses algorithms to optimize the trip assignments to vehicles and to dynamically sequence pick-ups and drop-offs. The policy service response time (time from request to pick up) is recommended to be set to 30 minutes initially. The actual response time would be dependent on demand and service supply, but the target would be that 90% of trip requests will be served within 30 minutes. A key benefit being that a rider would not need access to an automobile

to travel freely. This increases access to mobility and provides significant benefits to residents and the community.

CROZET SCENARIOS

The following scenarios describe the service concepts for Crozet in greater detail. Both scenarios presented below apply the microtransit SaaS and service model to the Link and Circulators services (if applicable).

CROZET SCENARIO 1

Map 1 illustrates the geographic service area of Crozet scenario 1. The concept maintains the current extent of the Albemarle Crozet Circulator service, but the Circulator will operate as an app-based microtransit service providing curb-to-curb mobility within the Crozet service zone. This increases the attractiveness of the Circulator service while simultaneously increasing accessibility to mobility services for localized trips and provides connections to the Connect commuter service (during peak times) for travel between Crozet and Charlottesville.

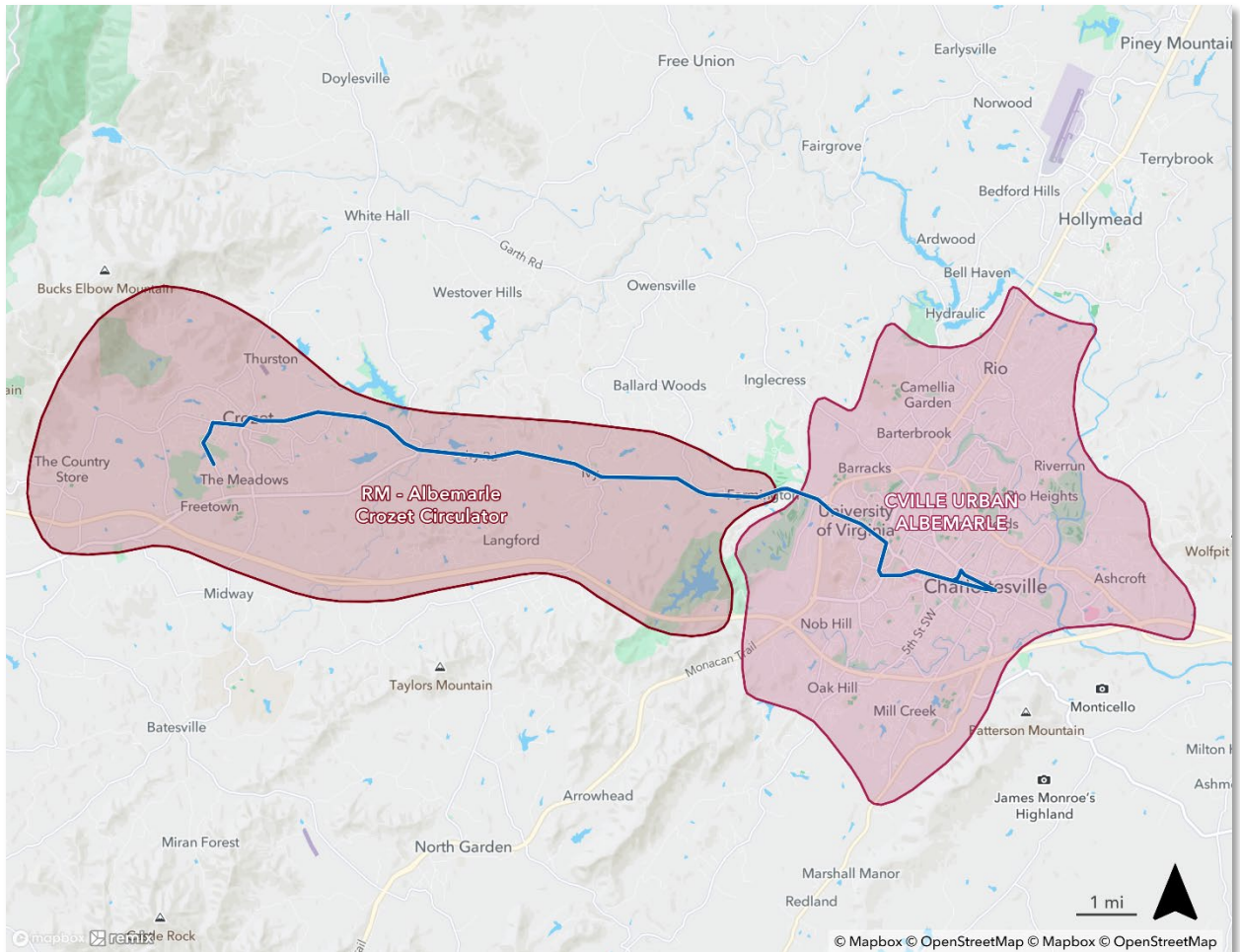
The microtransit Circulator service as defined would operate weekdays from 6:00am to 9:00pm to provide localized service in Crozet. The Circulator will also feed the Connect commuter bus during peak periods for travel between Crozet and Charlottesville (6:00am-8:30am and 4:00pm-9:00pm). This scenario reflects the same operational service area currently served by Jaunt as mentioned.

In this scenario, the service between Crozet and Charlottesville will be limited to rides on the Connect and Link services during peak periods as previously outlined. This will require a transfer for some riders (those who cannot walk or drive to meet the Connect bus), but the enhanced Circulator service will both expand access to the Connect commuter bus service by providing the first-mile and last-mile connections to Connect and expand localized mobility (curb-to-curb) within the Crozet service area using the proposed microtransit software (SaaS).

As indicated in Table 1, the Scenario 1 concept would potentially decrease operating cost on a per trip basis for Jaunt by decreasing revenue hours from the existing 142 per week to roughly 96 per week. The decrease in revenue hours is potentially further offset by higher productivity rates over time. An increase in demand could create a need to increase services thus increasing the overall revenue hours. The change in operating concept would attract new riders and potentially yield operating costs per trip that are lower than the existing service model as ridership increases. However, it would also limit access to Charlottesville to the peak times when the Connect and Link service operates.

Crozet concept scenario 1 as proposed is intended to operate service within Crozet to allow Jaunt to better understand the community acceptable of and demand for microtransit service prior to potentially transitioning all services to a true microtransit solution.

MAP 1 – CROZET CONCEPT 1



CROZET SCENARIO 2

Crozet will be served in the same manner as scenario 1 except, there will **not be** separate dedicated localized (Circulator) or Link service. The service functions shall be provided by Jaunt operating service as a microtransit service. This would include fulfilling the functions of providing localized curb-to-curb service (like Jaunt Circulator) and regional connectivity to and from the urbanized area (Connect and Link). In this scenario curb-to-curb service provides both localized trips (Circulator) and trips between Crozet and Charlottesville (Link) using the microtransit SaaS and service models as well as the refined Connect service.

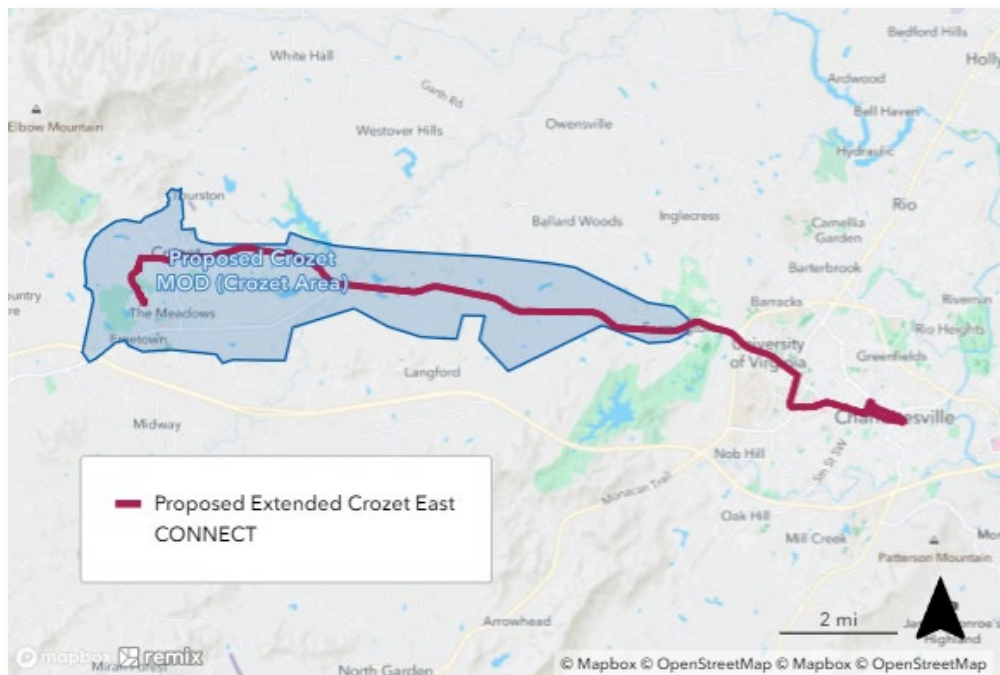
Map 2 outlines the modeled geographic service area of Crozet scenario 2. For operations planning purposes, the concept reduces the current extent of the Albemarle Crozet Circulator and Link services to better reflect population distribution, density, and historical trip origins and destinations. The more discrete focus on the distribution of trips improves the precision of service modeling for the proposed enhanced Circulator and Link service types. The application of

microtransit SaaS and service model to the Circulator and Link services will increase the attractiveness of the service while simultaneously increasing service accessibility.

Scenario 2 retains the Connect service and operates the functions of the Circulator (localized) and the Link (to/from Charlottesville) with one service. The services will operate as microtransit 6:00am to 9:00pm weekdays plus the existing Saturday service span. The refined Crozet Connect commuter route to Charlottesville will operate peak service as today. Residents will be able to request a ride anywhere within Crozet for localized mobility and request service from/to points in Crozet and the UZA service area. The SaaS platform will determine the best fit to serve the requested trip and identify the recommended service to be utilized, in some cases this might be connecting riders to the Connect service during peak periods to lessen the load on microtransit based on rider account information and the algorithm assigning trips. The enhanced Circulator and Link will operate using the microtransit SaaS and service model to provide service response times within 30-minutes and optimized operations. This service scenario will operate in compliance with the existing FTA Section 5311 funding regulations.

This scenario offers a unique ability to assess the need for the Connect service, meaning, if induced demand for the microtransit solution outweighs that of the Connect service, resources could be shifted and recollected to support the microtransit solution and replace fixed route. Alternatively, induced demand may also create a greater market for operating Connect. This strategy would use larger vehicles with greater capacity to serve greater numbers of riders per revenue hour of service. This scenario offers the ability to focus resources optimally as needed.

MAP 2- CROZET CONCEPT 2



As shown in Table 1 the Crozet Scenario 2 concept would increase revenue hours from the existing 142 per week to 194 per week, an overall increase in revenue hours compared to existing. Table 1 highlights the increase in revenue hours associated with the proposed service change. Within the increase in revenue hours comes additional capacity and a likely increase in ridership demand of at least 25%. Historically, the introduction of microtransit has resulted in induced ridership of 25% due to increased access to services, a more appealing service model for the broader public, and a more affordable mobility option.

When transitioning to this new service type, it is best to “overestimate” operational characteristics and adjust accordingly as data and key performance indicators are collected. That said, the revenue hours in Table 1 are potentially higher than what is needed for the proposed service.

Based on this scenario, it is recommended that Jaunt evaluate the ability to serve Connect demand using the microtransit service concept (Link). Removing the Connect service would reduce vehicle revenue hours. Given the nature of this concept, if the microtransit solution could handle the existing ridership under the current operating conditions there is a potential to see a decrease in revenue hours with the removal the Connect service creating a net neutral scenario similar to the existing Crozet services. However, if Connect demand grows, retaining the service may be the best option.

TABLE 1 - CROZET SERVICE CONCEPTS

Existing Crozet Services				
	Rev Hours/Wk	Rev Hours/Yr	Rides/Hr	Ridership
Crozet Connect (Fixed Route)	100.06	5,202.91	3.16	16,419
Crozet Link (DR)	40.18	2,089.10	2.14	4,472
Crozet Circulator	1.87	97.01	3.41	331
Total	142.10	7,389.02	2.87	21,222
Crozet Concept 1				
	Rev Hours/Wk	Rev Hours/Yr	Rides/Hr	Ridership
Proposed Crozet Connect	53.69	2,792.00	5.88	16,419
Crozet Link (DR)	40.18	2,089.10	2.14	4,472
Crozet Circulator	1.87	97.01	3.41	331
Total	95.73	4,978.11	4.26	21,222
Crozet Concept 2 (Existing Ridership)				
	Rev Hours/Wk	Rev Hours/Yr	Rides/Hr	Ridership
Proposed Crozet Connect	53.69	2,792.00	5.88	16,419
Proposed Crozet Microtransit	140.00	7,280.00	.66	4,800
Total	193.69	10,072.00	2.11	21,219
Crozet Concept 2 (25% Ridership Increase)				
	Rev Hours/Wk	Rev Hours/Yr	Rides/Hr	Ridership
Proposed Crozet Connect	53.69	2,792.00	5.88	16,419
Proposed Crozet Microtransit	140.00	7,280.00	.82	6,000
Total	193.69	10,072.00	2.23	22,419

GREENE COUNTY SCENARIOS

The following scenarios introduce service concepts for Greene County, the scenarios discussed below include the application of microtransit SaaS and service model to the Greene County Circulator service and the Greene County Link service. This will improve accessibility to mobility and service responsiveness for mobility services within Greene County. The proposed concepts will follow existing service standards and maintain and/or improve service offerings via the SaaS platform outlined previously.

The Greene County circulator uses between 1 and 6 vehicles per hour depending on time of day and day of the week. Table 2 shows existing vehicles in operation by time of day and day of the week. With existing Greene County circulator services, 5-6 vehicles are required at peak times. The proposed microtransit circulator service in Greene County is estimated to require 3 vehicles operating in peak service based on existing ridership, revenue hours, and productivity. More detailed information regarding revenue hours and ridership can be found in Table 3.

TABLE 2 – GREENE COUNTY CIRCULATOR VOMS

	6:30	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12:30	1:30	2 to 3	3:30	4 to 5	5 to 6	6:30
Monday VOMS	2	3	4	5	5	5	5	5	3	3	2	1	1
T60													
T65													
T67													
T72													
T78													
T80													
Tuesday VOMS	2	3	4	5	5	5	5	5	3	3	2	1	1
T60													
T65													
T67													
T72													
T78													
T80													
Wednesday VOMS	2	2	3	4	5	5	5	5	3	3	2	1	1
T60													
T65													
T67													
T72													
T78													
T80													
Thursday VOMS	2	3	4	5	6	6	6	5	3	3	2	1	1
T60													
T65													
T67													
T72													
T78													
T80													
Friday VOMS	2	2	3	4	5	5	5	5	3	3	2	1	1
T60													
T65													
T67													
T72													
T78													
T80													

Table 3 outlines the existing services offered within Greene County as well as the proposed service enhancements. Per Table 3 the current services total nearly 8,300 revenue hours annually according to the FY 2024 service overview provided by Jaunt. The near-term mobility solution

proposed for Greene County is the application of microtransit SaaS and service model to the Greene County Circulator for localized travel and to the Greene County Link service to connect with the Charlottesville UZA. The proposed services reflect a cost-neutral scenario. The analysis found that the proposed service model would improve access to service, service levels, response times, with fewer revenue hours and vehicles needed to operate the service. As modeled, 3 vehicles in peak service could sustain the current ridership and productivity possibly reducing the revenue hours associated and vehicles currently operated today. However, given the expectation of induced ridership associated with microtransit, and the fact the Greene County has some of the highest service demand, we modeled service requirements to accommodate ridership growth at 25%. It is assumed if ridership increases beyond the 25% threshold additional resources would be needed to accommodate the microtransit services in Greene County.

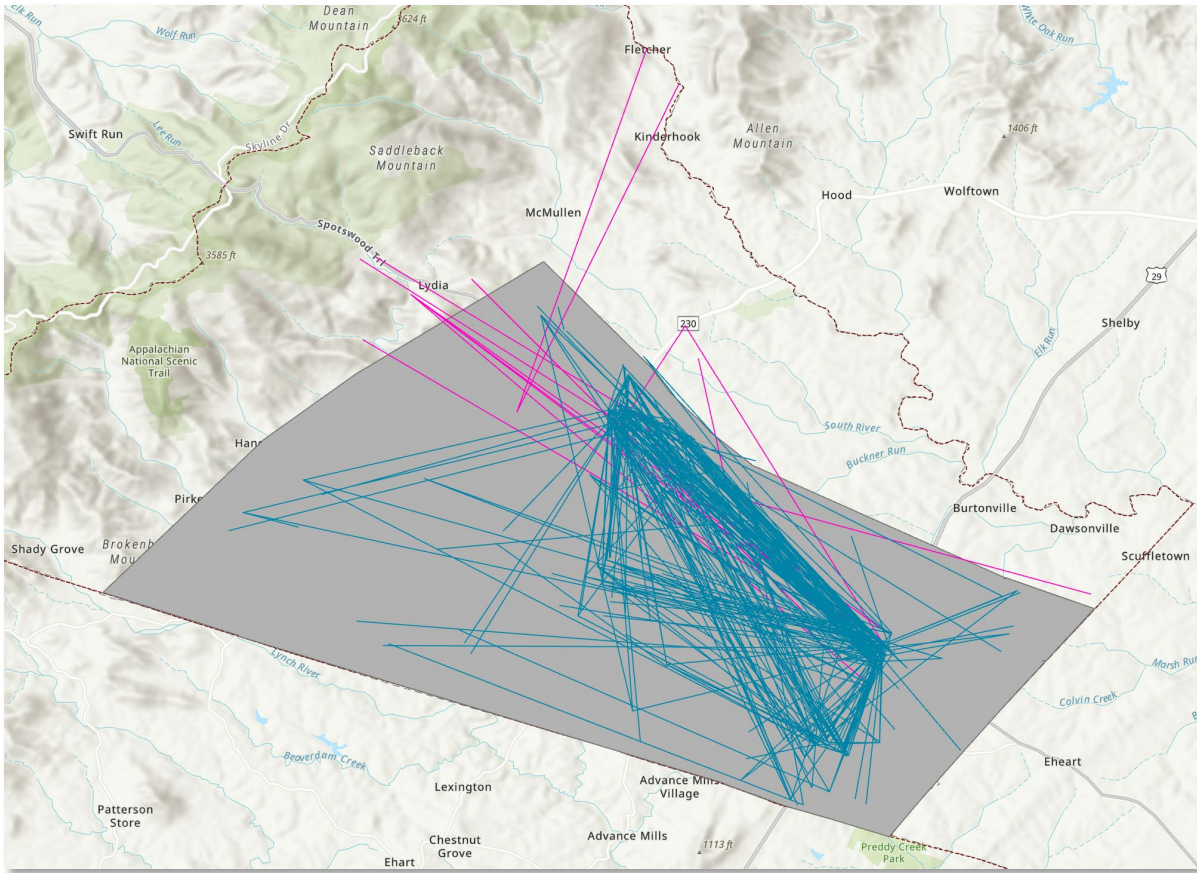
TABLE 3 – GREENE COUNTY SERVICES

Existing Greene Services					
	Rev Hours/Wk	Rev Hours/Yr	Rides/Hr	Ridership	VOMS
Greene Link (All Links)	42.32	2,200.85	2.34	5,141	3
Greene Circulator	117.13	6,090.85	2.01	12,243	6
Total	159.46	8,291.70	2.10	17,384	9
Proposed Greene Microtransit (Up to 25% Increase)					
	Rev Hours/Wk	Rev Hours/Yr	Rides/Hr	Ridership	VOMS
Greene Link (All Links)	42.32	2,200.85	2.34	5,141	3
Greene Circulator	117.13	6,090.85	2.51	15,304	3
Total	159.46	8,291.70	2.47	20,445	6

GREENE COUNTY – MICROTRANSIT CIRCULATOR CONCEPT

Map 3 highlights the proposed application of microtransit SaaS and service model to the Circulator and Link services in Greene County. The service model is intended to connect populations within Greene County, largely between Stanardsville and Ruckersville, where most of the travel origins and destinations fall for both Link and Circulator trips. The service is designed to facilitate more access to localized mobility within Greene County with the Circulator and facilitate simplified connections to the Charlottesville UZA with the Link. This model would enhance both the Circulator and the Link services by applying the SaaS platform with its advanced algorithms to optimize response times and service delivery, allowing for a seamless integration of these services. The service zone shown reflected in Map-3 shows existing Circulator trips in pink and trips for which both origin and destination points are contained in the zone (point-to point) in blue. Using May 2023 ridership data, there were 1,916 Circulator trips in Greene County. The draft service zone covers 87% of the Circulator trips. Riders falling outside of the zone would not lose coverage; they would schedule rides and be served within a reasonable response time. The development of the Greene County microtransit service would provide the greatest mobility benefit for Greene County and is a logical first step in improving mobility.

MAP 3 – GREENE COUNTY MICROTRANSIT ZONE CONCEPT



FUTURE CONSIDERATION - EXTEND ROUTE 29 NORTH TO RUCKERSVILLE

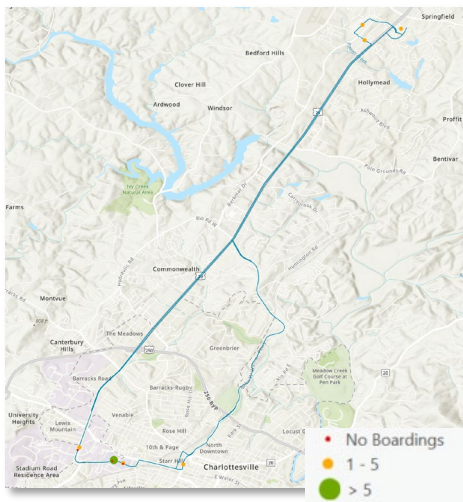
A service concept examined to complement the enhanced Circulator and Link services is to extend and modify (streamline) the Route 29 N Connect service to Ruckersville if future demand warrants the service and if the extension would result in a more cost-effective solution. Based on the high ridership observed along the existing Connect Route 29 N and the proposed enhanced Circulator service, extending the Connect route north to Ruckersville would likely result in greater overall demand for service on an improved Route 29 N Connect service.

The service concept would extend the Connect Route 29 N service to Ruckersville and connect with the enhanced Circulator for localized mobility and to facilitate connections to Charlottesville. Potentially, this offers a more efficient and effective service model for regional connectivity.

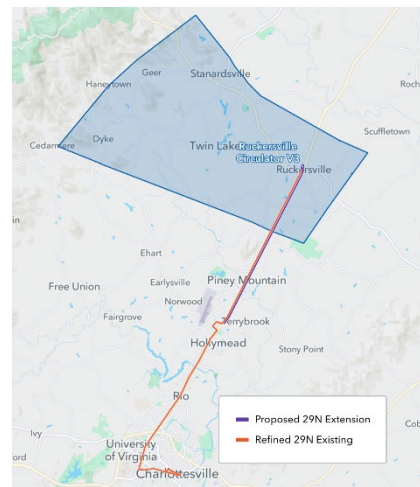
Map 4 reflects the ridership on the existing Connect Route 29 N and Map 5 reflects the extended 29 N Connect to Ruckersville. The alignment is streamlined, and the extension is shown in purple, beginning where the existing 29 N alignment terminates in the Hollymead area in Map 4. The new route would serve existing ridership locations in the UZA. Ridership is expected to increase on the Connect Route 29 N compared to existing service. The enhanced Circulator service concept will attract new ridership and increase service demand within Greene County.

The extension of the Connect 29 N service should be considered in the future if demand for travel to/from Charlottesville UZA increases sufficiently to make the added Connect operation more cost-effective than the Link service to connect Greene County and the Charlottesville UZA.

MAP 4 - EXISTING ROUTE 29 NORTH



MAP 5 - PROPOSED ROUTE 29 NORTH



ADA PARATRANSIT TRIPS IN THE UZA

The proposed service concept for the ADA complementary paratransit services in the UZA is to apply the microtransit SaaS and service model to the ADA paratransit service delivery model. All persons eligible for ADA service would continue to be served. This scenario does not commingle ADA and non-ADA trips in the UZA. The service will be fully ADA compliant in requesting service, accessing the vehicle, and completing the ride. Riders may request a ride in real-time using the mobile application, or the web portal, or by calling the Jaunt call center. Recognizing that most (65% to 75%) of ADA eligible riders can navigate curb-to-curb travel without assistance, we use this for operations modeling to estimate vehicle requirements and revenue hours, both of which directly impact operating costs.

The ADA micro model increases the overall cost effectiveness of the service by increasing service productivity (passengers served per vehicle revenue hour) through refined trip matching, assignment of trip requests to vehicles, and sequencing of pick-ups and drop-offs. The algorithms that optimize service delivery favor shared-ride solutions and continually optimize service delivery across the course of the service day. Increasing the number of riders per revenue hour thus yields a reduction in the number of revenue hours of service and thus decreases the cost per trip served.

All ADA trips would be served by the SaaS-enhanced ADA paratransit service model. Table 4 illustrates the likely impact of boarding times and more shared-ride trips associated with microtransit compared to existing Jaunt (traditional) ADA paratransit operations as noted in resulting productivity. Using the Jaunt sample dataset of 7,902 monthly ADA trips, as a larger share of ADA trips are served with microtransit boarding and alighting times closer to the general public, the net service productivity improves. As net productivity increases the number of vehicles required and revenue hours operated go down.

Typically, the share of ADA riders who need additional assistance ranges between 25% and 35%. Therefore, as the share of ADA customers using the service who do not need additional assistance to navigate curb-to-curb trips increases between 40% to 70% of the 7,902 monthly riders served, the greater the productivity likely to result for Jaunt by operating ADA service in a microtransit service model, thus decreasing the overall costs per trip.

TABLE 4 – ESTIMATED OPERATING IMPACT OF AN ADA MICROTRANSIT MODEL IN THE UZA

	<i>Percent of Total Existing Trips</i>				
	Monthly Trips	40%	50%	60%	70%
Total ADA Trips (Month)	7,902	7,902	7,902	7,902	7,902
<i>Trips Served at Existing Productivity</i>	7,902	4,741	3,951	3,161	2,371
<i>Trips Served at Micro Productivity</i>	0	3,161	3,951	4,741	5,531
<i>Rev-Hours at Existing Productivity</i>	3592	2155	1796	1437	1078
<i>Rev-Hours at Micro Productivity</i>	0	878	1098	1317	1537
Net Revenue Hours	3592	3033	2885	2754	2615
Shift in Net Productivity	2.2	2.6	2.7	2.9	3.0

SUMMARY FINDINGS

Based on a review of the service concepts presented, the application of microtransit SaaS functionalities and service model to the urbanized ADA service area has the greatest opportunity for Jaunt to improve service for existing ADA customers and reduce costs per trip, and potentially reduce operating costs. Our recommendation is for Jaunt to advance the microtransit pilot described for ADA service in the Urbanized area. Given that ADA service in the urbanized service area accounts for the largest share of budget and highest costs per trip of Jaunt's operations, a service pilot has potential for significant long-term benefits for riders and Jaunt.

The Greene County service concept also presents an attractive and viable service for residents in terms of value and utility and a means to improve service access and service cost-effectiveness. Given the concentration of population and existing trip-making, the application of a microtransit service model to the Circulator to serve localized mobility within Greene County, focused on Stanardsville and Ruckersville, appears to have the next highest priority as a pilot.

The Crozet service model options are more complex due to the existing service density and the interplay between commuter and localized mobility demand. Our recommendation is to first consider the ADA service in the UZA and Greene County microtransit as pilots. The pilot experience will inform future decisions about expanding the microtransit concepts to other parts of the Jaunt service area through operational, rider, and service performance experience.

The application of microtransit SaaS functionalities and the service model to the urbanized ADA service provides the most likely potential for immediate and long-term benefits. The software and operating experience gained through the proposed ADA pilot would be transferable to informing and supporting the pilots in Greene County, Crozet, and other locals within the Jaunt service area.

Jaunt will need to acquire an appropriate SaaS cloud-based platform with the requisite functionalities to support rider trip requests, provide service information and trip planning, fare payment, manage and optimize service delivery, and record and generate required reporting for comply with Federal Transit Administration and VDRRT regulations. Consideration should be given to the potential to minimize multiple mobility mobile applications within the Charlottesville area.