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Re: Regional Technology Plan - Transit Service Planning Recommendations for FY26

The purpose of this memo is to provide initial guidance prior to agencies finalizing the fiscal year 2026 (FY26) budget planning process, specifically regarding the value of transit service planning software Swiftly (or a comparable software with similar software modules) to support local and regional transit service planning including implementing and monitoring performance of expanded services, and supporting publication of real-time information about expanded services for riders and the public. This memo serves as an early deliverable of the Regional Technology Plan (under Task 5: Priority Area 2: Transit Service Planning Tools), but is not meant to replace the final deliverable memo for Transit Service Planning Tools. The information in this memo will be expanded upon in the final deliverable. This memo was created based on information from regional partners provided in Task 3: Regional Survey, and from interviews with CAMPO, GoDurham, and GoTriangle staff.

Swiftly is currently used by GoDurham and GoTriangle, and its continued and expanded use by more agencies can help achieve the vision proposed for the future use of Transit Service Planning Tools that will be a part of the Regional Technology Plan to be developed for transit agencies in the Research Triangle region.

This recommendation is being made prior to the completion of the Regional Technology Plan to provide adequate time for transit agencies to begin budget planning for fiscal year 2026 (FY26) that begins on July 1st, 2025. The following sections of this memo provide an overview of Swiftly as a transit service planning tool, as well as input and feedback received from GoDurham and GoTriangle staff regarding their use of Swiftly to support transit expansion in the region.

Regional Technology Plan Section on Transit Service Planning Tools

The Regional Technology Plan will include detailed sections termed "Priority Areas" for the region to plan for with respect to six different areas of transit technologies. Priority Area #2 will address Transit Service Planning tools that can help transit agencies in the region achieve the following Vision:

> *"Transit service planning staff across the region have access to a suite of high quality, cost effective, and interoperable tools that facilitate the service planning process, including tools for scheduling, run cutting, optimizing run times, optimizing on time performance, implementing service changes, publishing schedules and GTFS, and rider engagement related to transit service planning."*

A draft of the Priority Area #2 section of the Regional Technology Plan will be developed and reviewed by transit partners in the coming months. It will include a recommendation that all fixed-route operators in the region consider procurement of Swiftly (or a comparable software with similar software modules) based on research done for this memo and the use cases demonstrated by GoTriangle and GoDurham in their use of the software over the past few years.

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Overview of Existing Transit Service Planning Tools

Transit agencies providing fixed-route transit service in the region currently use a variety of transit service planning tools that are summarized below and also listed in Table 1 on the following page:

- Swiftly: Allows transit agencies to manage transit operations, plan transit service changes, optimize fixed routes, identify service disruptions, publish real-time information, and improve overall rider satisfaction.
- Remix: Allows agencies to create to design new routes, create fixed route timetables, and review how proposed changes impact transit network and Title VI populations.
- Optibus: Utilizes artificial intelligence and advanced optimization algorithms to help transit agencies perform route optimization, vehicle and driver scheduling, and rostering to improve transit route and network efficiency.
- UTA: Presents table summary of passenger count data gathered from passenger count equipment on buses and supports transit service planning decisions
- Hopthru: Allows agencies to review ridership data (similar to UTA), and is currently used by GoCary. Hopthru is owned by Swiftly and will become a Swiftly module.
- CAD-AVL Software: Used by transit operators to monitor vehicle locations in real-time and also to generate reports for transit operations.

Table 1 – Existing Service Planning Software Tools Used by Fixed Route Agencies in Region

Service Planning Areas	GoTriangle	GoCary	GoRaleigh	GoDurham	Chapel Hill
Transit Service Monitoring Tools (OTP, ridership)	Swiftly and TripSpark CAD-AVL system.	TripSpark CAD-AVL System, Hopthru (Swiftly)	UTA as vendor of APC for ridership. Clever Devices for CAD-AVL System	UTA as vendor of APC for ridership. Swiftly for OTP.	UTA as vendor of APC for ridership. GMV for CAD-AVL System used for OTP.
Service Change Planning Tools	Swiftly and Remix.	Remix.	Remix	Remix. Also Swiftly for OTP reviews.	Optibus
Run-cutting / blocking tools	TripSpark and Trapeze systems	MV (operator of service) performs run-cuts.	Optibus used by RATP-Dev (operator of service) for run-cuts.	Optibus used by RATP-Dev (operator of service) for run-cuts.	Optibus

Overview of Swiftly Transit Service Planning Software

Swiftly is a cloud-based software tool used by more than 180 transit agencies that provides visualization graphics for service planning staff to use in reviewing potential impacts to service changes. It is also used by transit operations staff in many agencies such as Pierce Transit in the Tacoma, WA area to monitor and manage their operations in real-time by reviewing real-time vehicle locations reported from the CAD/AVL systems on the buses. Agencies including CTtransit in the Hartford, CT area also use it to visualize real-time and historical data to guide service planning staff with estimating vehicle arrival times along routes, and provides visual insights into overall system performance. Swiftly is widely recognized as an effective tool to save significant administrative time and provide richer insights versus conventional visualization tools such as those included with CAD/AVL software and/or exporting data and developing charts in Microsoft

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Excel. Pricing is based on fleet size, so it is highly scalable and is used effectively by large, midsize, and small agencies nationwide.

For example, On-Time Performance is a common metric transit agencies measure and monitor for reviewing transit performance. Swiftly can provide a visualization of On-Time Performance that can be used by staff to quickly see which routes are not performing as expected at various times of the day, which allows service planning staff to then diagnose transit operations issues in a more timely manner than they otherwise would not have been able to do without the visualization.

The use of Swiftly and its software modules provides service planning staff with a visualization of real-time transit operations, and can have the overall effect of improved transit service reliability and rider experience. In addition to the On-Time Performance module, there are other software modules that can be purchased to support reviews of Run Times, Speed Maps, Live Operations viewing, and Transit Alerts for passengers, among other modules to support service planning and operations.

Swiftly can be used as a complementary service planning tool with other planning tools, such as Remix, and is not intended to be a replacement of those service planning tools. The graphical presentation of transit operations provides service planning staff with a visual view of how changes to transit services can impact transit run times and routes.

The project team has also performed a market review to identify any comparable software packages to Swiftly that can provide a similar type of visualization and review of transit operations. There is only one other known vendor of this type of software is Transify, which has similar capabilities to Swiftly, and is also modular. It is only currently deployed with Canadian transit agencies, but has not been actively deployed in the U.S. for any transit agencies.

GoDurham Use of Swiftly

Project staff working on the Regional Technology Plan project conducted a virtual meeting with GoDurham staff on Tues. Feb. 18th to discuss their use of Swiftly and view how staff are using the software in Durham and understand how the continued use of the software can also provide benefits to Durham and the Triangle region. GoDurham staff included Jennifer Green, Brian Fahey, and Quentin Martinez.

GoDurham transit service planning staff have used Swiftly since 2022 and they like the visualization offered by the software for reviewing reports such as On-Time Performance and Run Times. One example of a transit route on detour due to road construction was reviewed on screen in the meeting, which resulted in a decrease in on-time performance for that route; this is shown in Figure 2 below. Prior to Swiftly, Durham transit service planning staff would create spreadsheets of data on transit routes that would require weeks of time spent on pivot tables and manual data cleansing to understand on-time performance. This is no longer necessary given the visualization offered by Swiftly and can be completed in seconds instead of hours.

Figure 2 – GoDurham Review of On-Time Performance in Swiftly for Transit Routes

GoDurham staff also use Swiftly to export real-time and historical data on transit operations into a separate software tool known as Remix which assists with route and vehicle scenario planning. The historical data from Swiftly on travel times supports a review in Remix about impacts that would result from potential transit service changes. GoDurham staff noted that they currently gather passenger count data from a separate software package known as UTA, and this data is used to inform various decisions in scenario planning by service planners.

During this discussion, it was noted by project staff that Swiftly has recently acquired a software provider known as Hopthru, which had provided a visualization of passenger counts recorded on vehicles at different points along transit routes. GoCary is one of the transit partners currently using Hopthru, and it is anticipated that a continued use of Swiftly in future years would allow service planning staff from other transit partners to include historical passenger data in their scenario planning work, which would help to increase the efficiency of service planning for agencies that have integrated Swiftly with Remix software.

GoDurham staff also showed their current use of the Live Operations module and the Alerts module that are additional modules which GoDurham has purchased from Swiftly (GoTriangle has not purchased these modules for their use as of yet). The Live Operations module can be used by staff located at the regional call center to answer questions about the location of specific buses along a route. The Alerts module can be used to enter details about a route detour or change as a result of a short term disruption to regular transit services. These alerts are then visible to passengers who use the Transit App to review real-time transit vehicle locations along their desired route.

Swiftly also enables GoDurham transit service planners to plan for, implement, and monitor service expansion to meet the goals of the county transit plans. As transit service expands to serve new areas, it is critical for service planners to understand how new routes are performing in terms of On-Time Performance and other service metrics to maintain a high level of rider satisfaction.

Overall, GoDurham staff have commended how the software has reduced the amount of time it has taken to guide transit service planning decisions compared to prior years of service planning without the software. Jennifer Green noted at the Feb. 18th meeting the following with respect to use the Swiftly software:

"The benefit of Swiftly is the visualization and the way that data is analyzed and displayed. It is superior to any of the other tools by far. "

GoTriangle Use of Swiftly

Project staff working on the Regional Technology Plan project conducted a virtual meeting with GoTriangle staff on Fri. Feb. 14th to discuss the use of Swiftly and view how staff are using the software to understand how the continued use of the software provides benefits to GoTriangle and to passengers in the Triangle region. GoTriangle staff included Jay Heikes, Tyler Huggins, and Austin Stanion.

GoTriangle transit service planning staff have used Swiftly to perform regional transit service planning efforts since September 2020 and have learned how it can be an effective time-saver and an efficient tool for: 1) Reviewing On-Time Performance (OTP), 2) Performing effective route planning at shared stop locations, and 3) Diagnosing issues reported from passengers about transit service.

Staff use an OTP module in the software to create quarterly OTP reports for all GoTriangle routes as part of Transit Plan reporting required for the Wake, Durham, and Orange county transit plans. Staff can also use Swiftly at a more granular level to review route performance in the event of reports from passengers about late buses. This is very useful for shared stop locations in the region, as staff can use Swiftly to identify cases where a GoTriangle bus was late in connecting with another route operated by another transit partner. GoTriangle can review these instances and make adjustments to transit schedules where needed to improve transit performance for passengers using multiple transit providers. As new transfer points are being created in future years, Swiftly will continue to assist GoTriangle at future locations as well.

GoTriangle staff also demonstrated their use the Run Times and Speed Maps modules that are a part of the Swiftly software used by GoTriangle. These two modules can be used to review route performance and assist with reviewing potential impacts to service changes in the network. Figure 1 presents an image of a speed map to review segments of a route through the NCSU campus area.

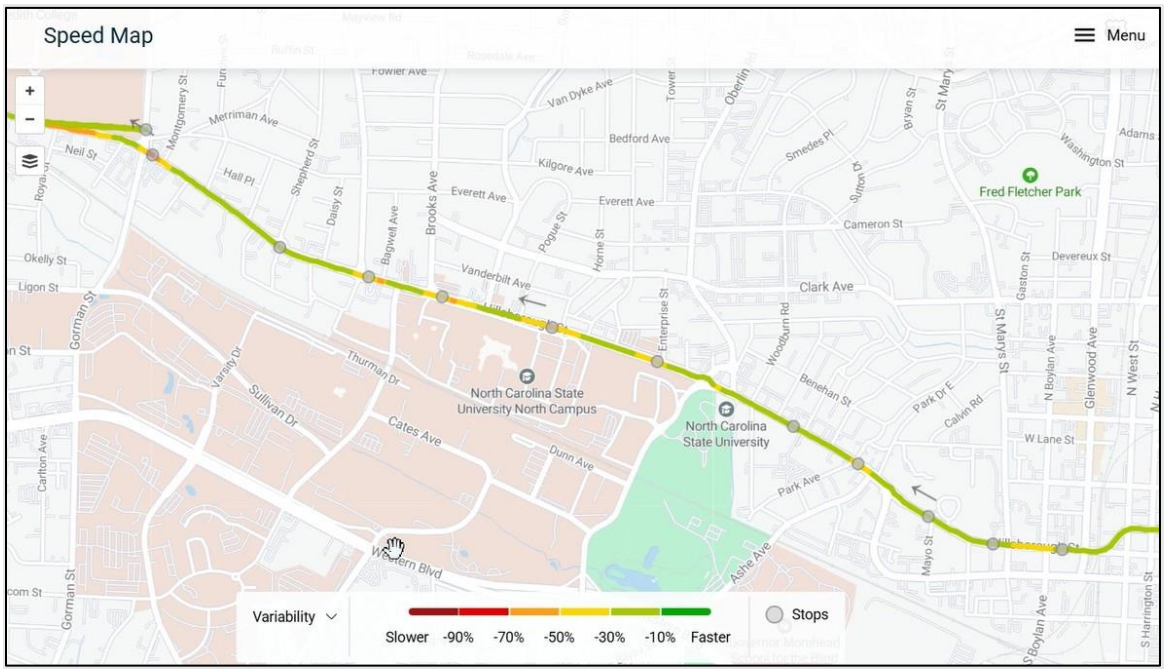

Figure 1 – GoTriangle Speed Map of Route on NCSU Campus

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Swiftly also enables GoTriangle transit service planners to plan for, implement, and monitor service expansion to meet the goals of the county transit plans. As transit service expands to serve new areas, it is critical for service planners to understand how new routes are performing in terms of On-Time Performance and other service metrics to maintain a high level of rider satisfaction.

GoTriangle staff have also noted that Swiftly provides excellent customer service in response to questions about the software or issues reported by staff about the software. Questions are reviewed and explained very well, and issues are resolved in a timely fashion. Overall, Go Triangle staff have commended how the software has improved their overall efficiency at transit service planning, the quote below from Jay Heikes at the Feb. 14th meeting summarizes the improvement seen since beginning to use the software:

> *"Not only can we get the data, but we can have it at our fingertips in a few clicks, and in a couple of moments, we can answer questions that it previously took 8 hours to answer."*

Future Benefits of Swiftly Use with Other Applications

During the two virtual meetings with GoTriangle and GoDurham staff, the topic of two software integrations of Swiftly with other existing applications used by the agencies were also discussed. These integrations would improve transit service planning efficiency and allow staff for GoTriangle, GoDurham, and the overall region to better serve riders on a regional basis. These efficiencies are described below:

1. **Remix Integration**: Go Triangle uses Remix for route schedule development, but an integration with Swiftly (as GoDurham has) will allow for sharing real-time and historical bus operational data into the Remix platform. This will allow GoTriangle transit service planners to more efficiently perform scenario planning (similar to Durham) and create more accurate and reliable transit schedules. Staff will also better be able to see travel speeds and dwell times for different routes, which in turn will allow them to create more accurate transit schedules that better reflect actual travel times.

   It should also be noted that Remix is used by GoCary, GoRaleigh, and GoDurham staff as well for transit schedule creation. Future use of Swiftly and its integration with Remix by those agencies could also improve the efficiency of transit schedule creation for those agencies in addition to GoTriangle.

2. **Transit App Integration**: Swiftly also can integrate with the Transit App, in which Swiftly provides real-time transit data, including vehicle locations and service disruptions, to the Transit App for it to present real-time transit information to passengers that use the Transit App. This integration is facilitated through a data feed using the GTFS-RealTime standard (GTFS-RT), allowing for data sharing between the Swiftly and Transit App systems.

   It should also be noted that GoRaleigh, GoDurham, and Chapel Hill Transit make real-time transit information available through the Transit App for passengers. GoDurham has already completed this integration of Swiftly with the Transit App, which enables accurate, real-time transit information to be shared through the Transit App to passengers. GoTriangle has also been reviewing the potential to subscribe to the Transit app as well.

   Future use of Swiftly and the Transit App integration will allow for more transit agencies in the region to direct passengers to a common application, which will make it easier for passengers to navigate transit options, access real-time information, and plan trips on multiple transit providers across the region.

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3. **Transit Signal Priority Integration**: The Live Operations module on Swiftly can also be used to analyze real-time vehicle locations along a route and operate as part of a future Transit Signal Priority (TSP) implementation in the region. Swiftly has integrated with other cloud-based TSP vendors to send TSP requests to cloud-based TSP software vendors when buses meet a schedule adherence threshold of behind schedule by X minutes or more.

   Swiftly has noted that they would GPS coordinates sent from buses at a high frequency (once every 1-3 seconds) in order to make an accurate determination of when TSP requests should be sent to TSP vendors A potential future integration of Swiftly with this TSP vendor provides an opportunity for TSP interoperability with other transit partners that utilize Swiftly, which is also one of the visions of the Regional Technology Plan with respect to TSP for the region.

4. **Operational Resiliency**: The software platform for Swiftly is also resilient to changes in CAD / AVL systems that may occur over time with partner agencies. As long as a static GTFS feed is provided along with real-time GPS coordinates, Swiftly can produce the same type of visualizations and dashboards for service planning staff regardless of the hardware vendor chosen for CAD / AVL operations.

Transit Partner Survey Comments on Service Planning

As part of the Regional Technology Plan project, a survey was distributed in December 2024 to partner transit agencies with questions related to the six Priority Areas of the plan that will be developed. With respect to transit service planning (Priority Area #2), a number of agencies provided open-ended comments about the desire to implement new service planning functions that could increase overall rider satisfaction.

Below is a summary of some comments gathered from partner agencies and how the future use of Swiftly could be used to perform those functions:

1. GoCary: “Infinitely variable customization on-the-fly to adjust which level of data and detail is desired. General simplification of the process/procedure. Transit scheduling tools informed by up to date real world traffic data, and based on known/tracked average transit vehicle travel speeds."
   a. The modules reviewed with GoTriangle and GoDurham staff can provide data for time periods and routes that can be adjusted to fit any desired time period of interest.
   b. The Speed Map module also currently used by GoTriangle and presented in Figure 1 of this memo would provide the needed data on average transit vehicle travel speeds that can support service planning.
2. Town of Apex: “We are not unhappy with our current setup where data is provided upon request, but it would be nice to have more easy access to tools to do our own monitoring as needed (this is more of a wishlist item).”
   a. The Live Operations module within Swiftly would provide transit partner agencies with a real-time view of transit vehicle locations to answer questions on where vehicles are in real-time.
   b. Other modules, such as On-Time Performance, can also be used to satisfy data requests in a timely and efficient manner.

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3. CAMPO: "It would be beneficial to have a regional standard for these services and be able to have a central point that could host all the inputs from service providers in the region. This could also be used to bring greater attention to regional impacts of routes, and provide a method of better updating and inclusion into such efforts like the Triangle Regional Model (TRM). "
    a. Given the flexibility of Swiftly to address multiple needs through the modules it can provide as needed, a recommendation for its use with service planning can improve rider satisfaction with using transit across multiple agencies and jurisdictions.
    b. Its use as part of updates to the Triangle Regional Model (TRM) as noted may improve overall transportation planning efforts in the region as well.

Recommendation of Swiftly for Transit Service Planning in Region

Based on the information gathered from GoTriangle and GoDurham staff, it is our recommendation that funding for Swiftly be budgeted for FY26 for all agencies interested. A recommendation for procurement of Swiftly by transit agencies will also be made in the Regional Technology Plan as the plan is developed over the coming months by the project team. This is based on the following items noted in the memo:

1. Swiftly will help to increase the efficiency of service planning work by staff for transit agencies in the region. This will have the effect of improving agency planning for routes at shared stops in the region, which will improve rider satisfaction for riders that utilize multiple transit providers to make trips across the region.

2. Integration of Swiftly with Remix (an existing service planning application used by transit agencies in the region) will further increase the efficiency of developing accurate route schedules and timetables for routes throughout the region.

3. Integration of Swiftly with the Transit App will allow for more transit agencies in the region to direct passengers to a common application in the Transit App, which will make it easier for passengers to navigate transit options, access real-time information, and plan trips on multiple transit providers across the region. Raleigh, Durham, and Chapel Hill already have the Transit App for their passengers.

4. Integration of Swiftly with cloud-based TSP providers provides the opportunity to accomplish another one of the visions of the Regional Technology Plan, which is to provide opportunities for TSP interoperability with other transit partners across the region.