



NAPA VALLEY TRANSPORTATION AUTHORITY Board Agenda Letter

TO: Board of Directors
FROM: Kate Miller, Executive Director
REPORT BY: Matthew Wilcox, Program Manager- Transit
(707) 259-8635 / Email: mwilcox@nvta.ca.gov
SUBJECT: Approval of (1) Purchase Order No. 19-1004 with Swiftly for a Real-Time Passenger Information and Transit Analytics Platform and (2) Resolution No. 19-07 Amending the Biennial Fiscal Year (FY) 2018-19 and Fiscal Year (FY) 2019-20 Budget

RECOMMENDATION

That the Napa Valley Transportation Authority (NVTA) Board (1) authorize the Executive Director, or designee, to execute and make minor modifications to Purchase Order No. 19-1004 (Attachment 1) with Swiftly to provide real-time information portal for passengers and analytical platform to improve the Vine's on-time performance. The contract term will be for one (1) year with an optional two (2) one (1) year renewal based on NVTA's satisfaction with the product. The total contract cost will be \$48,864 for the first year and \$47,664 for each of two additional year options; and (2) approve Resolution No. 19-07 (Attachment 2) amending the biennial FY 2018-19 and FY 2019-20 budget to increase appropriations by \$114,410.

COMMITTEE RECOMMENDATION

None

EXECUTIVE SUMMARY

NVTA staff has limited scheduling tools to ensure bus running times are consistent with Vine schedules and to reflect real time data in a way that is customer-friendly and accurate. Swiftly provides a platform that allows passengers to view accurate real-time data that would give NVTA planning staff multilevel analytics to refine issues with the Vine schedules. Staff estimates that the cost of the software will be offset by roughly \$50,000-75,000 in cost savings annually in efficiencies associated with schedule slack.

PROCEDURAL REQUIREMENTS

1. Staff Report
2. Public Comment
3. Motion, Second, Discussion and Vote

FISCAL IMPACT

Is there a Fiscal Impact? Yes. The initial contract term is for one year with a total of \$48,864. If NVTA is satisfied with the software's performance, the contract term will be extended for two additional years for an additional cost of \$170,904. The software will be funded with Transportation Development Act (TDA) planning funds.

As part of the initial set up, NVTA will incur a one-time cost totaling \$1,200. Year 1 costs, including the initial set-up costs, will total \$48,864. The cost per year for the remaining two years is \$47,664. The amounts are taxed at the Napa County rate of 7.75%. Tax is included in the amounts shown below. Staff recommends including a 10% contingency to factor in cost increases that could change based on vehicles in service. NVTA staff will consider renewing the service at the end of Year 1.

Year 1 start-up and recurring:	\$52,650.96
Year 2 recurring:	\$51,357.96
Year 3 recurring:	\$51,357.96
Contingency:	\$15,536.69
Total Three-Year Project Budget:	\$170,903.57

Is it currently budgeted? No. A budget adjustment and increase in the appropriation will be necessary for this project for FY 2018-19 and FY 2019-20. The adjustment will need to be approved by the Board through Resolution No.19-07 (Attachment 2).

Future fiscal impact: Yes. If NVTA decides to extend the contract past the first year.

Consequences if not approved: NVTA will continue using its current system for providing real-time data.

CEQA REQUIREMENTS

ENVIRONMENTAL DETERMINATION: The proposed action is not a project as defined by 14 California Code of Regulations 15378 (California Environmental Quality Act (CEQA) Guidelines) and therefore CEQA is not applicable.

BACKGROUND AND DISCUSSION

The Vine system struggles with on-time performance. This is largely because the Napa Valley has dynamic traffic patterns that vary by time of day and year. NVTA has been

unable to specifically identify where issues in the schedules are across all times of day. Building schedules using traditional methods frequently creates operating inefficiencies. Some trips end up with too much time between timepoints resulting in wasted resources and frustrated passengers. Other trips do not have enough time put into the schedule resulting in frustrated passengers and drivers. Swiftly will allow NVTA staff to identify where inefficiencies are in the schedule as well as provide suggestions to correct them. Swiftly accounts for more than just bus travel time - it also takes into account local traffic conditions when suggesting ways to improve a schedule. Being able to work faster and accurately identify scheduling trends will allow NVTA to release schedules that synchronize with seasonal traffic changes.

The platform provides assistance to customer service staff as well. Being a cloud based platform, customer service staff can easily pull up a map showing the location of buses in real time. In the same module, they can replay bus location from as recent a time as thirty seconds prior, to as far back as when data was initially collected. This allows customer service staff to provide accurate information to customers and mollify customer stress anticipating a missed bus or extended wait times.

Passengers can investigate where their bus is using Google maps or an app. Swiftly data seamlessly interacts with Google Maps and the Transit App putting real-time data at the fingertips of anyone with a smart device. For those without a smart phone, call-in and text options are also available. The real-time data takes into account more than where a bus is located. The app uses advanced algorithms which are constantly updated with new data and compares those to current bus and traffic activity so that passengers receive the most accurate bus arrival time.

As part of its demonstration, Swiftly allowed NVTA staff to use its platform. NVTA was able to identify numerous inefficiencies in the system looking at just one month's of existing Vine data. Roughly 2,200 annual hours of "slack time" was identified in Vine schedules. "Slack time" is an industry term used to define time when a vehicle is technically in service but is either sitting at timepoints waiting to depart or dwelling at stops longer than needed to maintain on time performance. Eliminating this slack time will help improve the customer experience, speed up travel times, and save the agency thousands of dollars a year. Attachment 3 to this report provides an in-depth overview of Swiftly's capabilities.

NVTA staff reached out to neighboring agencies who use Swiftly, including Valley Transportation Authority (VTA) and Eastern Sierra Transit Authority (ESTA). The agencies had positive reviews of the system and found it helped alleviate the same problems the Vine is facing. Both large and small agencies have been able to utilize all aspects of the platform for planning more timely service. Customers from the agencies we reached out to stated that the information they were getting from Swiftly was more reliable and trustworthy than other data sources.

SUPPORTING DOCUMENTS

Attachments: (1) Draft Purchase Order No. 19-1004
 (2) Resolution No. 19-07
 (3) Swiftly Proposal for NVTA

DRAFT

ATTACHMENT 1
NVTA Agenda Item 9.5
March 20, 2019



Purchase Order

Napa Valley
Transportation
Authority
625 Burnell Street
Napa, CA 94559

Phone: 707-259-8631
Fax: 707-259-8638
www.nvta.ca.gov

VENDOR

SWIFTLY, INC.
1 SUTTER STREET, SUITE 500
SAN FRANCISCO, CA 94140
POC: JONATHAN SIMKIN, CEO
T 415.483.9777
www.goswift.ly

Purchase Order #: 19-1004
Date: 03/11/2019
Vendor ID:
C3662994

Bill To:

Napa Valley Transportation
Authority (NVTA)
ATTN: Accounts Payable
625 Burnell Street
Napa, CA 94559-2912

Ship To:

NVTA
625 Burnell Street
Napa, CA 94559
POC: MATTHEW WILCOX, Manager Public Transit
T 707.259.8635 E mwilcox@nvta.ca.gov

Requested By	Ship Date	Ship Via	FOB	Buyer	Terms	Tax ID
WILCOX	N/A	N/A	DEST	KULICK	NET 30	68-0471080

QTY	Item #	Units	Description	Discount	Taxable	Unit Price	Total
			SWIFTLY PLATFORM for VINE transit system, incl. set-up & configuration, Swiftly Transitime, Swiftly Insights, GFTS data management services, dedicated customer manager, for Vine Transit System, AS PER ATTACHED PROPOSAL dated February 25, 2019.				
			YEAR 1 (3/31/2019-4/1/2020)				\$48,864.00
			YEAR 2 (4/1/2020-3/31/2021)				\$47,664.00
			CONT ON PAGE 2 OF _____)				

NOTICE OF INCLUDED TERMS AND CONDITIONS

This purchase order is a federally funded contract and as such, certain mandatory terms and conditions apply to this purchase order. These provisions include, **but are not limited to** the provisions of Buy America 49 U.S.C. §5323(j), 49 C.F.R. Part 661; Cargo Preference 46 U.S.C. § 55305, 46 C.F.R. Part 381; Fly America 49 U.S.C. § 40118, 41 C.F.R. §§ 301-10.131 through 301-10.143; Bus Testing 49 C.F.R. Part 665; U.S. DOT Third Party Procurement Regulations 49 C.F.R. §18.36 or 40 C.F.R. §§19.40 through 19.48, FTA Circular 4220.1F (including all mandated terms and conditions contained in Appendix D-4) and FTA Master Agreement FTA MA(17).

Subtotal	\$96,528.00
Tax 7.75%	3,786.96
	-/-
	-/-
TOTAL	\$104,008.92

THIS ORDER WILL BECOME VALID UPON RECEIPT OF VENDOR ACCEPTANCE.

VENDOR ACCEPTANCE

Vendor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) contract/purchase order, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. *(Attachments are listed herein.)*

ORDER AWARDED AND ISSUED BY

Individual listed below is hereby authorized to award ordered material/services as specified, or incorporated by reference herein, on behalf of the Napa County Transportation and Planning Agency.

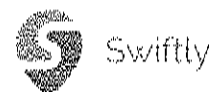
NAME AND TITLE
(Signature of person authorized to sign)

DATE

KATE MILLER, Executive Director DATE
(Signature of person authorized to sign)

FOR INTERNAL USE ONLY

FUND APPROPRIATION: CMA/TDA 8300 8301001 52310 CMA_ADMIN AGENCY_ADMIN



Swiftly Order Form

Customer Napa Valley Transportation Authority

Quote Date February 27, 2019. Pricing valid for 30 days.

Effective Date Upon Contract Signing Date

Contract Term One (1) years. The term shall automatically renew for successive one (1) year terms unless either party notifies the other party of its intent not to renew at least thirty (30) days prior to the end of the then current term. The annual service cost is guaranteed throughout the duration of this agreement. Renewal prices will be assessed based on Swiftly's then current pricing.

Marketing Terms Willingness to work with Swiftly to develop a case study, mutually agreeable press release, and ability to use your agency as a reference (website, presentations, etc.).

PRODUCT	QTY	UNIT COST	TOTAL COST
Swiftly Platform Initial Setup & Configuration	12 Routes	\$500 / Route	\$6,000 One-Time
		100%	-\$6,000
Swiftly Transitime			
Real-Time Passenger Information Module	36 Buses	\$28,080 / Year	\$28,080 / Year
Live Map Module	-	Included	-
Open Data APIs (GTFS-rt, JSON, XML, etc.)	-	Included	-
SMS and Voice automated services	-	Included	-
Passenger Facing Website	-	Included	-
Transitime and Insights bundle discount (if purchased by March 31, 2019)		20%	-\$5,616
Swiftly Insights			
GPS Playback Module	36 Buses	\$10,800 / Year	\$10,800 / Year
On-Time Performance Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Vehicle Speed Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Runtime Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Buy 2 modules get 2 free (if purchased by March 31, 2019)		-\$21,600	-\$21,600
Initial Training & Dedicated Customer Success Manager	-	Included	-
GTFS Data Management			
GTFS Schedule Creation	12 Routes	\$100 / Route One-Time	\$1,200 / One-Time
Ongoing Support & Google Maps Sync	12 Routes	\$300 / Route / Year	\$3,600 / Year
		TOTAL SETUP	\$1,200 One-Time
		ANNUAL TOTAL BEFORE DISCOUNTS	\$74,880
		Q1 2019 PRICING INCENTIVE (if purchased by March 31, 2019)	-\$33,216 / Year
		TOTAL YEAR 1	\$48,864
		TOTAL EACH YEAR THEREAFTER	\$47,664

Swiftly Order Form (Signature Page)

Payment Terms: Due Net 30. Invoice sent separately. All fees are non-refundable and non-cancellable without Swiftly's written consent.

SMS & Voice Limits: Up to a combined 5,000 SMS and voice calls are included per month for US customers only. Each additional 5,000 combined SMS and voice calls per month costs \$125.

GTFS Support: Swiftly includes 20 hours of free GTFS cleanup per agency. Additional time will be billed at a rate of \$100/hour.

Sales Tax: If your agency is not tax exempt, sales tax may be added to this purchase order.

Terms of Use: By signing below, Customer agrees that this Order Form is subject to, and Customer is bound by, the Swiftly SaaS Terms of Service located at: <http://goswift.ly/saas-terms-of-service> (the "Swiftly Terms"). Unless otherwise specifically stated in an Addendum, in the event of a conflict between the Addendum and the Swiftly Terms, the Swiftly Terms shall govern.

Swiftly

Signature:

Name: Jonathan Simkin

Title: CEO

Date:

Address: 1 Sutter Street, Suite 500
San Francisco, CA 94104

Billing Contact: Rachel Brody

Billing Email: accounting@goswift.ly

Billing Phone: (415) 483-9777; Option 2

Customer

Signature:

Name: Kate Miller

Title: Executive Director

Date:

Address: 625 Burnell Street
Napa, CA 94559-3420

Billing Contact:

Billing Email:

Billing Phone:

What do I get with a Swiftly License?

We have built our company around transparency and simplicity. Here's what you need to know.

Swiftly Transitime

Real-time Passenger Information Module - a system to generate more accurate real-time passenger information. Riders can access this information through native mobile apps, websites, SMS, and voice systems.

- Transitime leverages sophisticated algorithms to generate more accurate real-time arrival estimates for passengers. The system has been benchmarked to be 15-30% more accurate than current industry systems.
- Transitime supports any GPS system, making it low cost and easy to deploy.
- The system is capable of automatically assigning vehicles to routes, reducing an agency's dependency on dispatchers and driver logins.
- The system produces open data and APIs for third party app developers, including the common GTFS-real-time format, as well as JSON, XML, and SIRI data feeds.
- Native iOS and Android mobile apps help riders access real-time arrival information and multi-modal trip planning. You may choose to deploy your favorite app or suite of apps, including Transit app (recommended), Google Maps, or any other app of your choice. Swiftly will help you determine the best mobile strategy for your agency.
- Riders can also access real-time arrival information through any web browser, on any device, regardless of the screen size. Swiftly's web-based interface adjusts itself to provide optimal experiences on desktops, tablets, and mobile devices.
- Riders can also text Swiftly's SMS-based system to access real-time information. Your agency will receive a dedicated phone number for SMS based inquiries.
- In addition to text messages, riders can call your agency's dedicated phone number powered by Swiftly to audibly access real-time information. This is particularly useful for riders who are visually impaired.
- Up to a combined 5,000 SMS and voice calls are included per month. Each additional 5,000 combined SMS and voice calls per month costs \$125.

Live Map Module - Swiftly Live Map is a web-based portal that lets you monitor the performance of your transit network in real-time.

- Locate vehicles in real-time on a live map
- Filter the display to one, many, or all routes
- Visualize vehicles based on direction or live on-time performance or headways.
- Click on a vehicle for more information, including vehicle ID, route, direction, headsign, live on-time performance, live headway, and driver ID (when available)
- While Swiftly can automatically assign vehicles to routes, your agency can also manually assign vehicles to routes through Swiftly Live Map.

Swiftly Insights

On-Time Performance Module - a web-based analytics tool to help agencies monitor and improve on-time performance.

- Allows you to analyze and visualize millions of data points in seconds to quickly monitor your system's on-time performance and generate monthly reports.
- Ability to drill into the details and determine the on-time performance by route, by stop along a route, by time of day, and all the way down to the individual trip level. This in-depth analysis enables your transit agency to determine specifically where

and when issues are occurring.

- Enables you to perform before and after studies to measure the impact that service changes. You can run on-time performance reports over two different date ranges and instantly determine if the service change was successful.
- System configuration is purely GTFS based, which means that on-time performance calculations are relative to the same schedule used by passengers in Google Maps and other trip planning applications. This ensures that your performance metrics always are based on the true passenger experience.
- Users can easily export data generated by Swiftly into Microsoft Excel and other applications. All data is open.

GPS Replay Module – easily replay any moment in time to reveal historical schedule adherence, speeds, vehicle positions, and more.

- Quickly view any historical vehicle position information by route or by vehicle ID.
- Access relevant historical information, like on-time performance, vehicle speed, driver ID, and more.
- Visualize historical data on a map with color coded vehicles based on their historical on-time performance.

Run Times Module – easily view actual travel times and compare them with allocated schedule based times.

- Instantly visualize actual travel times, collected from thousands of trips, to compare actual durations against scheduled durations.
- Segment the different components of travel times - typical drive time, traffic, and dwell times.
- Analyze travel times by trip or down to the stop level.
- View the distribution of travel times based on all trips during a selected time frame, and instantly calculate any percentile travel time of interest.
- Export cleaned and normalized data out of the system (scheduling tools, excel, etc.).
- Quickly determine and quantify the impact of schedule changes, stop relocation, TSP, queue jumps, or other infrastructure projects.

Vehicle Speed Module – easily visualize vehicle speeds over any desired timeframe to quickly locate slowdowns in service quality.

- For any route and direction, over any timeframe, quickly create a color coded map which shows vehicle speeds and dwell times.
- Quickly locate which route segments and intersections are causing performance issues.
- As infrastructure changes are made, instantly measure the impact they have on vehicle speeds and dwell times.

Usage & Other Limits

- Up to a combined 5,000 SMS and voice calls are included per month for US customers only. A fee of \$100 will be assessed for each additional 5,000 combined SMS and voice calls thereafter.
- Swiftly includes 20 hours of free GTFS cleanup per agency. However, if your agency has many errors in your GTFS, additional time will be billed at a rate of \$100/hour.

General Terms

- We use a Software as a Service (SaaS) model with annual subscriptions per product. There are no hosting or maintenance fees.
- Subscriptions include unlimited users within your agency.
- We believe in data access and availability. As long as your agency is a paying customer, you will have easy access to download any data from the modules you purchase.
- Every time we update the platform or launch or a new feature, your agency will automatically have access to that feature so long as you have paid for that module. Since the system is cloud-based, you will never need to download or re-install new software. Simply login and you'll see the new feature!

Support Plan

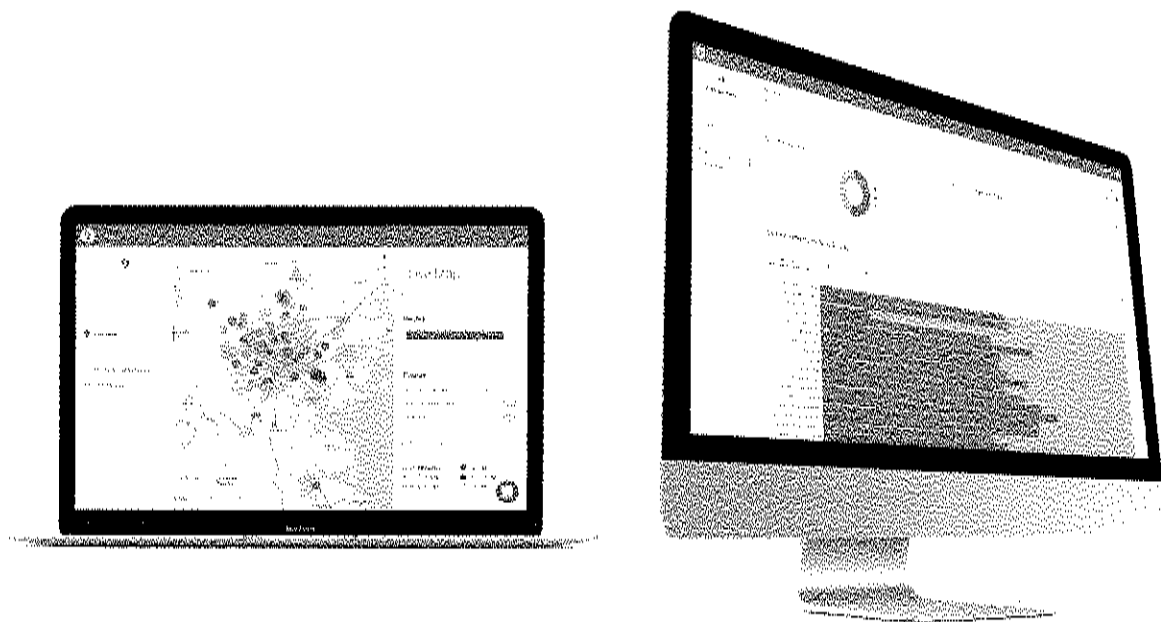
- You will be assigned a dedicated Customer Success Manager.
- Your Customer Success Manager will create a success roadmap for your team, including a comprehensive onboarding process, access to online training materials, and help with your public launch for customer facing tools.
- We pride ourselves on having the best support team in the industry. Always feel free to reach out with questions, comments, or suggestions on how we can better serve you. We typically respond to inquiries within 24 hours.

Technical Requirements

- Everything is hosted in the cloud – you do not need to install or download any software.
- You can access the software from any computer, anywhere, anytime.
- Swiftly works on the latest version of any browser.

Swiftly Proposal for NVTa

Real-Time Passenger Information & Next Generation Transit Analytics



February 25, 2019



Swiftly

1 Sutter Street, Suite 500
San Francisco, CA 94104

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Summary of Project Goals

After meeting with NVTA's team, several goals have been outlined for a collaboration:

- Generate highly accurate and reliable real-time information for bus passengers
- Demonstrate that real-time passenger information can be sent to any point of rider interaction, including mobile apps, web pages, electronic stop displays, SMS systems, interactive voice systems, and more.
- Demonstrate the ability to quickly and efficiently monitor on-time performance, travel times, dwell times, and more. This data can be used agency-wide, by planners, operations, schedulers, executives, and more.
- Show how Swiftly's big data tools can be used for planning purposes - to help determine where planning efforts should be focused and to measure the impact of service and/or infrastructure changes.

Project Objective	Current Situation	Swiftly Solution	Expected Benefits
Improve the passenger experience	Current real-time passenger information is inaccurate and passengers are complaining.	Swiftly Transitime: RTPI Module	• Improve customer satisfaction scores. • Increase ridership and farebox revenue. • Reduce inbound call volume and call center costs.
Focus planning efforts on the highest yield projects.	While your agency already collects a tremendous amount of data, it is very difficult make sense of this information.	Swiftly Insights: On-Time Performance, Runtime, and Vehicle Speed Modules	• Avoid overspending on capital improvements by focusing only on the stops and intersections that require investment rather than along the entire corridor. • Improve vehicle speeds and reduce running times by targeting transit signal priority and other capital improvements on the highest yield intersections.
Easily justify capital improvements to	It is very time-consuming and challenging to justify	All Swiftly Modules.	• Quickly visualize your complex data in easy to understand ways so that

the board and to the public	transit investments, and the benefits of those investments, to the public		everyone can comprehend why you are making changes.
Improve schedule accuracy	Current systems are limited by timepoints and there is no way to see what happens between timepoints	Swiftly Insights: Runtime Module and Swiftly Insights: Vehicle Speed Module	• Understand how your agency is performing down to the stop level. • Use these insights to update and modify your route schedules. • Improve overall on-time performance.
Improve team productivity	Current teams rely on manual efforts for planning and data analysis, making projects very time consuming.	All Swiftly Modules	• Accomplish more planning projects in much less time. • Improve customer service response times through faster and easier to use vehicle replay functionality.
Help dispatcher better track vehicles	The current dispatcher interface is slow to update and hard to use.	Swiftly Transitime: Live Map Module	• Help operators better track real-time performance statistics, like headways and on-time performance.
Improve intra-agency coordination and communication	The data that exists for schedulers, planners, operations, customer service, and executives can come from different onboard systems and can be difficult to analyze.	All Swiftly Modules	• Create a single data standard that can be used across all departments. • Share simple visualizations across departments to communicate and resolve performance issues.
Use your existing hardware	New products typically required new hardware along with drilling and installation. This can be costly and time consuming.	All Swiftly Modules	• Swiftly platform works with any existing hardware. As your agency modifies or changes hardware in the future, these new data sources can be seamlessly integrated into the Swiftly platform making the system future-proof.

Return on Investment

We have worked with dozens of transit agencies and have demonstrated measurable results. The following are just a few customer examples:

Agency	How They Use Swiftly	Benefits
	• TSP and corridor analysis • Express vs. local service after study. Stop thinning and stop relocation analysis.	• Compressed a multi-month study down to weeks using the Swiftly platform. • Saved money by focusing capital improvement dollars on problem intersections rather than entire corridors.
	• Improve the quality of their real-time passenger information	• Deployed Swiftly on their commuter rail and saw an improvement in their real-time passenger information from 77% accuracy to 95% accuracy. This improvement resulted in fewer passenger complaints and a better overall passenger experience.
	• Corridor Analysis • Headway Management • Real-time passenger information	• Completed nine corridor TSP analysis studies in the time it would normally take to do one study, representing a 9x productivity increase. • Leveraging the Swiftly live map to monitor and prevent bus bunching and gaps in real-time. • Able to offer accurate, real-time ETA information via popular mobile apps, SMS, IVR, and web interfaces. • 50% reduction in passenger complaints in 2017 over 2016.

	• Real-time passenger information • On-time performance tracking.	• Saw 90% drop in the number of "where's my bus" calls since implementing Swiftly. • Used to take 3 days to address customer inquiries – this can now be done in a few minutes. • Ability to coordinate with local police when a crime is in progress using Swiftly's Live Map and GPS Playback module.
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Swiftly Overview

Swiftly, Inc. is a San Francisco based software company that specializes in big data solutions for transit, including accurate real-time passenger information systems and robust data analytics. The members of our experienced team have been at the forefront of developing customer information systems and advanced travel analysis tools for over a decade. Swiftly now works with nearly 40 transit agencies and impacts over 2 million passengers per day.

Swiftly is a cloud-based technology platform that uses a Software as a Service (SaaS) business model to provide transit agencies with a flexible, "off-the-shelf" system. Our solutions can integrate directly with an operator's existing CAD/AVL system, or supplement them with additional low-cost hardware if limited data is available. Swiftly's platform consists of two core components:

1. **Swiftly Transitime:** a system to generate accurate real-time information externally for riders and internally for dispatchers and controllers.
2. **Swiftly Insights:** a new way to leverage historical big data to improve operational efficiency and service reliability.

Agencies may opt to deploy one or many of our solutions.

Cloud-Based Software

All of Swiftly's software is cloud-based. You will never have to worry about maintenance, hosting, or downloading software updates. Your agency will automatically have the most up-to-date software with the latest features and bug fixes every time you login.

Additionally, Swiftly is constantly improving our software based on feedback from customers. If Swiftly adds a new feature for one customer in a software module you have purchased, your agency will automatically have access to that feature the next time you login. Our goal is to continually enhance the software based on feedback from our customers so that everyone can benefit from a product that gets better over time.

Scope of Work

The following sections provide more detail about the Swiftly platform and how it can help you achieve your objectives. The key items discussed in this proposal include:

- Generating highly accurate real-time passenger information to improve the rider experience. All information can be promoted to passengers through mobile applications, web pages, SMS, interactive voice response (IVR), and other systems.
- Open data APIs (GTFS, GTFS-rt, XML, and JSON feeds) so that 3rd party developers, such as Transit and Google Maps, can access real-time information for passengers.
- Insights and analytics about on-time performance and historical vehicle position playback
- Real-time vehicle monitoring tools

Swiftly Transitime

Swiftly Transitime is a system to generate accurate real-time information externally for riders and internally for dispatchers and controllers.

Real-Time Passenger Information Module

Building trust with passengers is key to increasing ridership and keeping them happy. Connect with riders where they are — transit apps, webpages, SMS, and IVR — to give them the industry's most accurate real-time vehicle predictions with Swiftly Transitime. With reliable and accurate updates, more people will catch their ride, keeping cities moving happily and efficiently.

Key Benefits:

- **Highly Accurate:** Swiftly Transitime has been independently benchmarked to be 10-30% more accurate than current industry RTPI systems. Our state of the art algorithms leverage large volumes of historical and real-time data to more accurately predict future arrival times.
- **More Riders:** Many agencies experience an increase in ridership with accurate real-time information.
- **Happy Riders:** Up to 90% of customers report greater satisfaction with transit when accurate real-time information is made available.
- **Time Savings:** Riders report an average of 2 minutes saved for wait times when real-time information is made available.
- **Swiftly Transitime** supports any GPS/vehicle location system, making it low cost and easy to deploy. You can modify or add vehicle location hardware in the future without impacting service for passengers.

Key Features:

- The system is capable of ingesting assignment information from scheduling systems, automatically assigning vehicles to routes, and also manual vehicle assignment, thereby reducing an agency's dependency on driver logins.
- The system produces open data and APIs for third party mobile and web application developers, including the common GTFS-real-time format, as well as JSON, XML, and SIRI data feeds. This means you can seamlessly send real-time information into Google Maps, Transit, and other applications.
- Riders can access real-time arrival information anywhere - through any web browser, via SMS, and through interactive voice response (IVR). Your agency will receive a dedicated phone number for SMS and voice-based inquiries. Voice-based inquiries provide audible access to real-time information, which is particularly useful for riders who are visually impaired.

Collecting & Combining Vehicle Position Data From Many Sources

Swiftly can collect and combine location data from many sources (CAD/AVL, Wi-Fi Systems, GPS Trackers, etc) to better track vehicle locations and system performance. The platform does not require any proprietary hardware to identify vehicle locations, making it flexible and future proof. Even as underlying infrastructure, such as CAD/AVL or onboard hardware is modified, Swiftly can continue to operate because it can incorporate any source(s) of vehicle position data in real-time. Additionally, as Swiftly collects more data from more sources, it becomes more accurate at tracking vehicle locations and predicting future arrival times.

Passenger Facing Tools

Swiftly has developed a robust set of tools to help riders access real-time transit information.

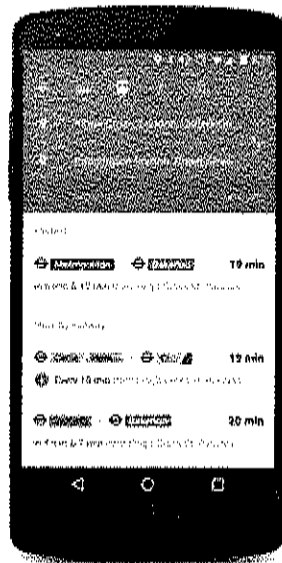
Open Data Support for 3rd Party Mobile Applications

While one mobile app can be useful, passengers often like to choose the mobile app that best supports their needs. For this reason, Swiftly provides your agency with a suite of open data tools, enabling any mobile app or apps of your choosing to integrate with your real-time arrival information. This helps you reach more riders than ever before.

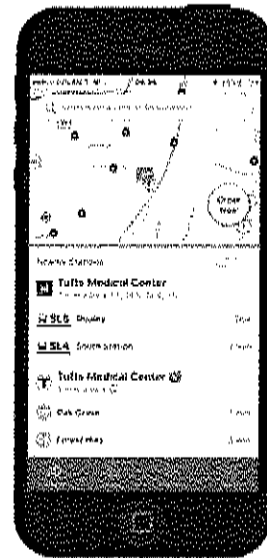
Swiftly Transitime supports all of the industry data standards for real-time passenger information: GTFS-realtime, JSON, XML, and SIRI. Common app integrations include Transit (leading North American mobile app for transit), Google Maps, and Moovit.



Transit



Google Maps

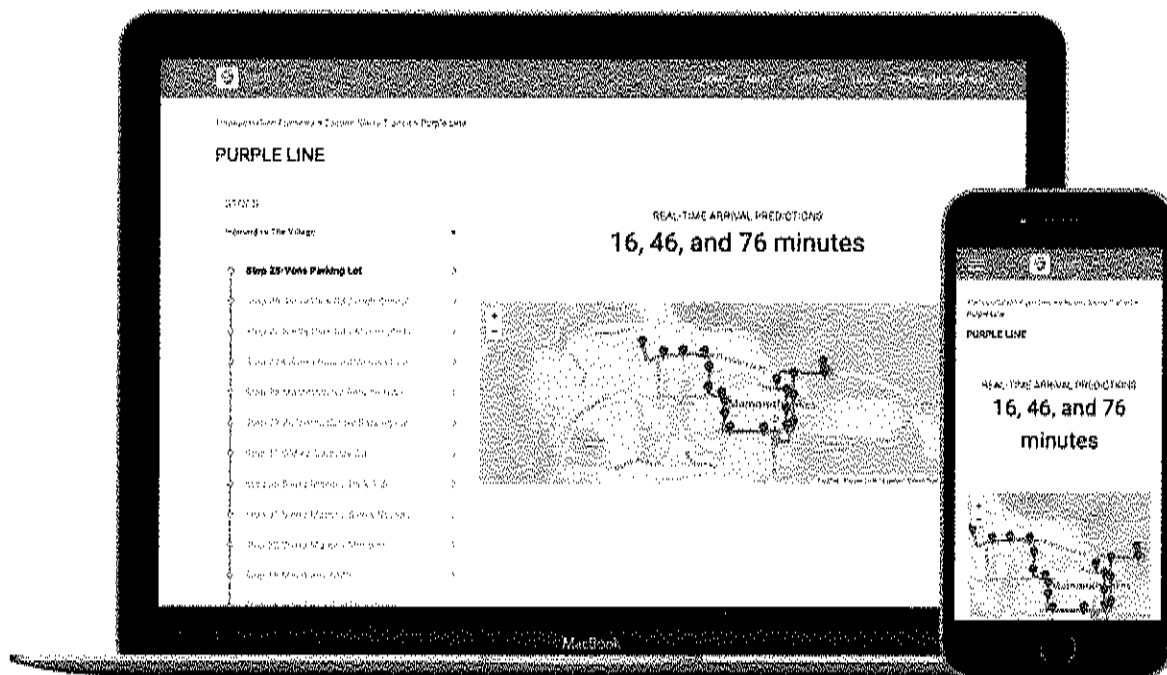


Moovit

Public Website

In addition to providing riders with access to your data via a mobile app experience, Swiftly can help you provide riders with real-time information through an easy-to-use website. The website lets users see routes that are of interest to them, including a map with the route path and real-time arrival information.

The public-facing website is fully responsive, meaning the user interface can automatically adjust and resize to provide an optimized experience on any device. If a user opens the public website on a desktop computer or mobile device, they will easily and quickly be able to access real-time passenger information.



Given Swiftly's open data APIs, all of your real-time passenger information can be made available to third party developers, allowing you the option of easily adding a different real-time information interface to your website.

SMS & Voice

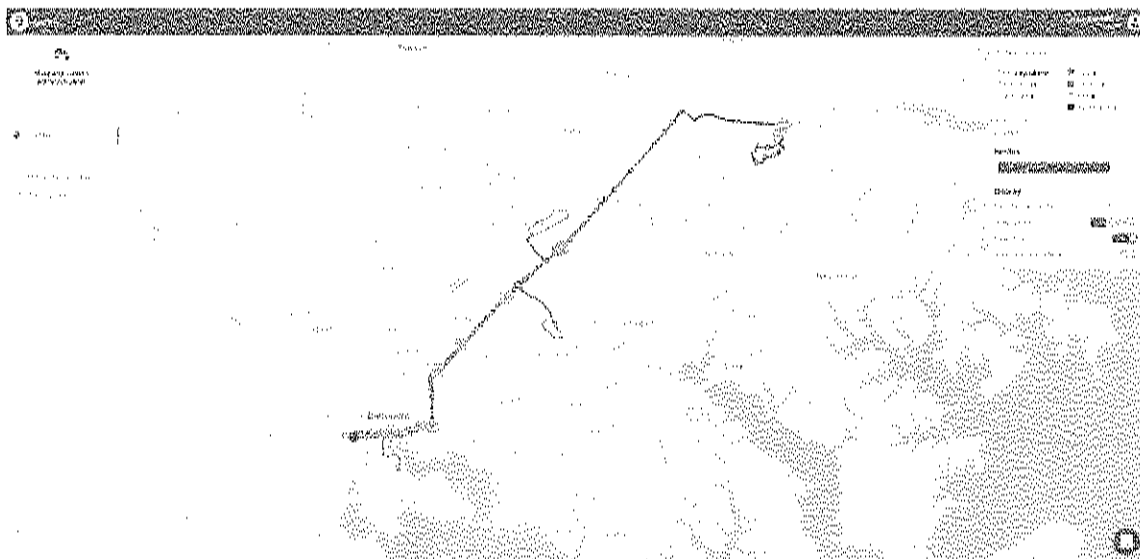
Riders can also access real-time information via SMS and interactive voice response (IVR). Your agency will be given a dedicated phone number so that riders do not need to memorize an agency key. The rider simply texts or calls in with the stop number and the system will respond with the arrival times, route name, and nearest stop location. Visually impaired riders can easily call your agency's dedicated phone number to receive arrival times through an audible response.



Live Map Module (Internal Use)

In addition to passenger facing real-time information, Swiftly provides backend management tools for your agency. Swiftly's Live Map Module is a web-based portal that lets you monitor the state of your transit network in real-time.

View schedule adherence maps to see which vehicles are running early (red), late (yellow), or on-time (green), in real time throughout the day. Or, modify the vehicle display to view live headway status to detect bunching or gaps. Click on a vehicle for more information about the route, vehicle ID, driver ID (if available), live on-time performance, live headway, etc. Monitoring your transit network has never been easier.



Key Features:

- Locate vehicles in real time on a live map
- Filter the display to one, many, or all routes
- Visualize vehicles based on direction, live on-time performance, or headway status
- Click on a vehicle for more information, including vehicle ID, route, direction, headsign, live on-time performance, and driver ID (when available)
- While Swiftly can automatically assign vehicles to routes and use assignment information from your scheduling software, your agency can also manually assign vehicles to routes and trips through this dashboard.

Swiftly Insights

Swiftly Insights analyzes and visualizes millions of data points in seconds to help you quickly locate and resolve performance issues. Intuitive reports surface issues and are fluidly connected, showing not only problem areas, but also giving color to root causes — thus equipping planners, schedulers, and operations teams with the information they need to make more efficient and effective decisions.

Key Benefits

- Discover when and where operational issues occur
- Increase efficiency and reduce operating expenses
- Utilize insights to inform planning processes
- Improve the passenger experience with more reliable transit
- Seamlessly integrates with existing vehicle tracking systems (when data is available)

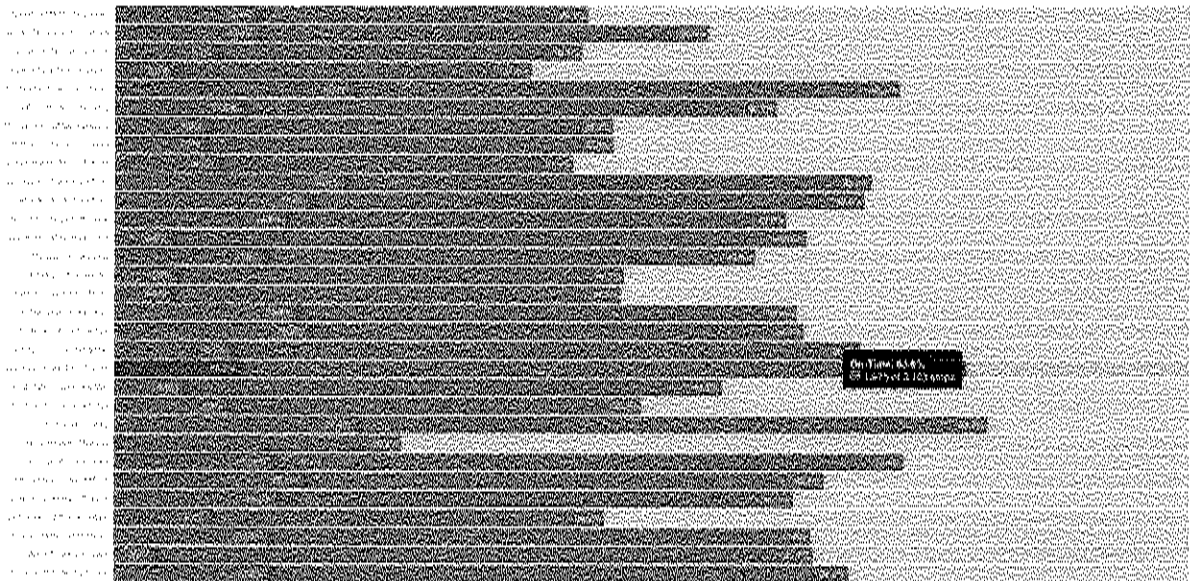
Key Features:

- Web-based analytics tool that leverages big data to provide your agency with robust historical on-time performance reports.
- Determine specifically where and when on-time performance issues are occurring. You can drill into the details to examine on-time performance by: route, stop along a route, time of day, and down to the trip and stop level.
- Perform before and after studies to measure the impact of service or policy changes. You can run on-time performance reports over two different date ranges and instantly determine if the change was successful.
- Replay historical vehicle positions as every GPS point is saved.
- Swiftly accurately calculates actual departure and arrival times by using live vehicle position information along with historical travel times. Additionally, Swiftly generates more accurate on-time performance calculations than industry average by treating the terminus differently than other stops during the route (because the terminus only has an arrival but not a departure).
- System configuration is purely GTFS based, which means that on-time performance calculations are relative to the same schedule used by passengers in Google Maps or other trip planning applications. This ensures that your performance metrics are always inline with the true passenger experience.
- Users can easily export data generated by Swiftly for additional analysis in Microsoft Excel, R, Tableau, or other applications. Your data is open and available via API or for download.

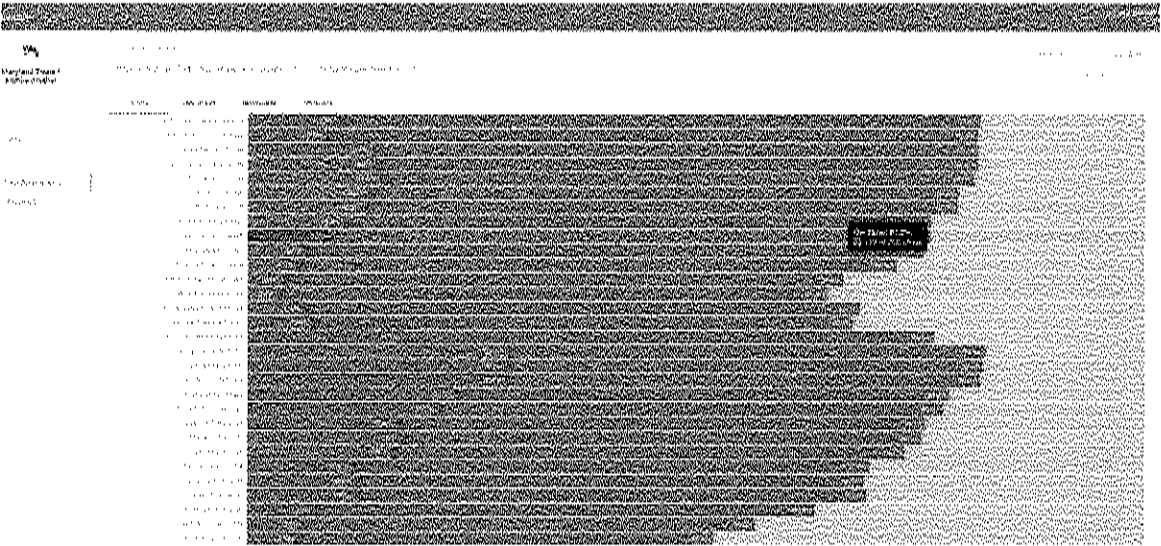
On-Time Performance Module

The following sections illustrate how the Swiftly Insights On-Time Performance module can be used to monitor and improve an agency's on-time performance. The chart below displays your on-time performance by route, showing that you can quickly determine your fleet's schedule adherence. Red represents early departures, yellow represents late

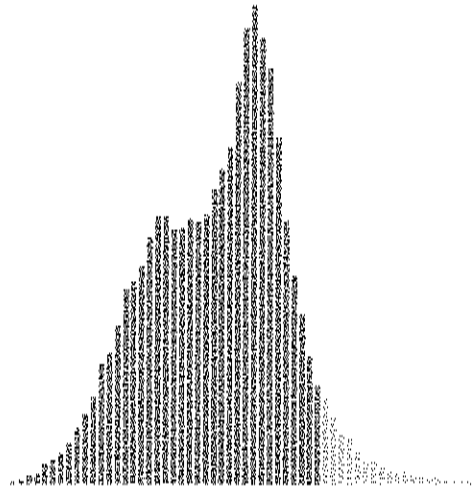
departures, and green represents on-time departures. This chart demonstrates what percentage of the time vehicles depart early, late, or on-time relative to the published schedule for each route in your transit system.



On-time performance reports can be generated for an individual route to determine which stops along the route are causing departures to fall ahead or behind the posted schedule. The schedule adherence chart below displays the on-time performance for each stop along a sample route. You can quickly determine which stops have early departure issues (red) and which tend to run late (yellow).



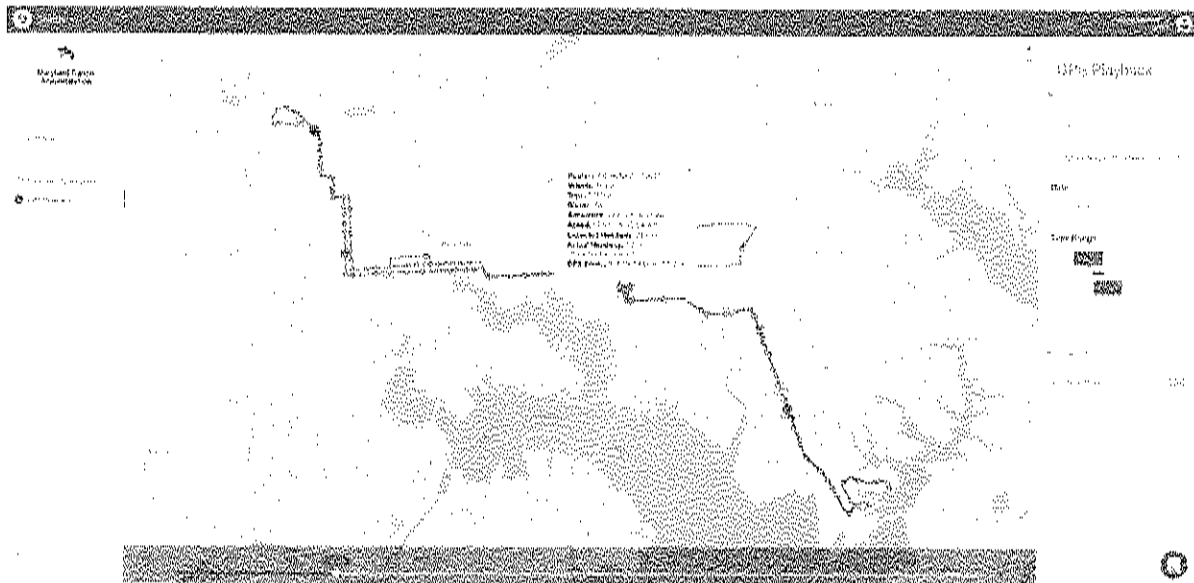
Additionally, if you wish to gather more information about the performance of a particular route, you can view the on-time performance distribution. This represents how early or late vehicles depart, allowing you to understand the severity of identified on-time performance issues. The x-axis shows the number of minutes early or late that the vehicle departed, relative to the published schedule, and the y-axis represents the number of stops that occurred for each departure time. Red columns represent early departures, yellow columns represent late departures, and green columns represent on-time departures.



Schedule adherence data can also be displayed by time of day. The report below shows how a route's on-time performance can be impacted by the time of day. The x-axis represents the time of day, and the y-axis indicates the number of departures. For this particular chart, we have applied a filter to only show late departures so that we may determine when vehicles tend to run late. We can easily see that during the evening commute hours, the vehicles tend to run later relative to the schedule than at any other time of day.

GPS Playback Module

Since Swiftly stores all historical GPS information from your vehicles, you can easily replay any moment in time to reveal historical schedule adherence, speeds, vehicle positions, and more. The chart below shows historical vehicle positions for a sample route. The slider at the bottom of the image can be dragged to replay any moment in time. Vehicle and route replays are immensely helpful in understanding one-off or systematic problems discovered in the On-Time Performance module and can also aid in debugging various GTFS issues.



Runtime Module

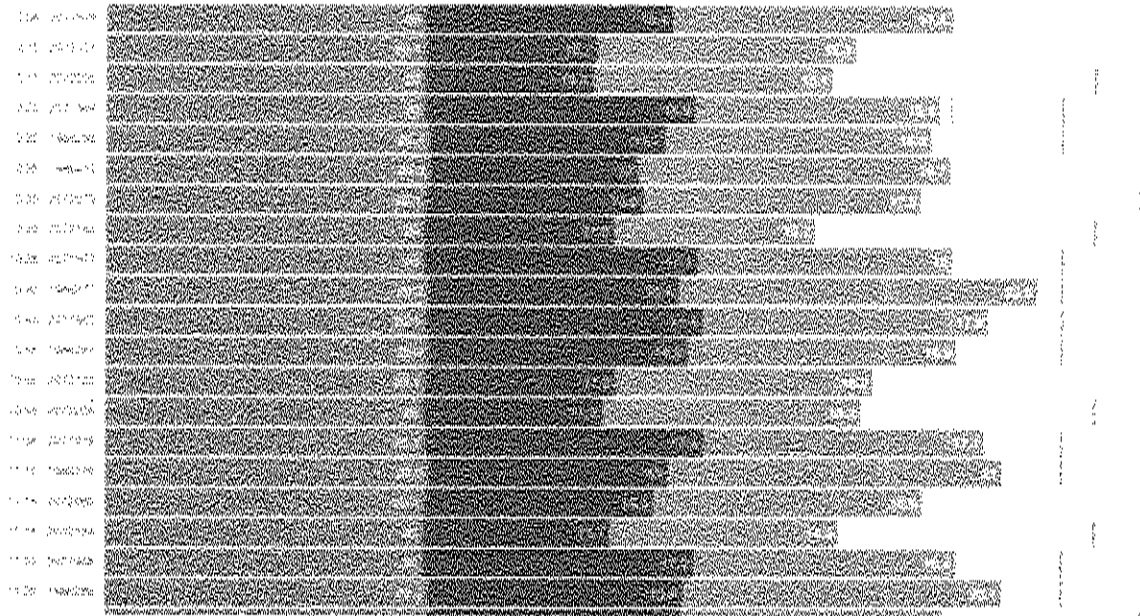
Swiftly can help you easily compare actual runtimes relative to both the scheduled runtime and next trip start time to monitor your scheduling accuracy. If scheduled runtimes are too long, you have added too much slack which can increase your operating budget while negatively impacting the passenger experience (long trip runtimes). However, if your scheduled runtime is too short, you can negatively impact drivers by reducing their allocated layover or deadhead time. Swiftly helps you instantly compare actual performance versus scheduled performance.

In the chart below, the Swiftly runtime module shows the actual runtime broken into three components, with the green line indicating "scheduled travel time" and the orange line showing the "next trip start time." The x-axis is *minutes*, and the y-axis is each trip:

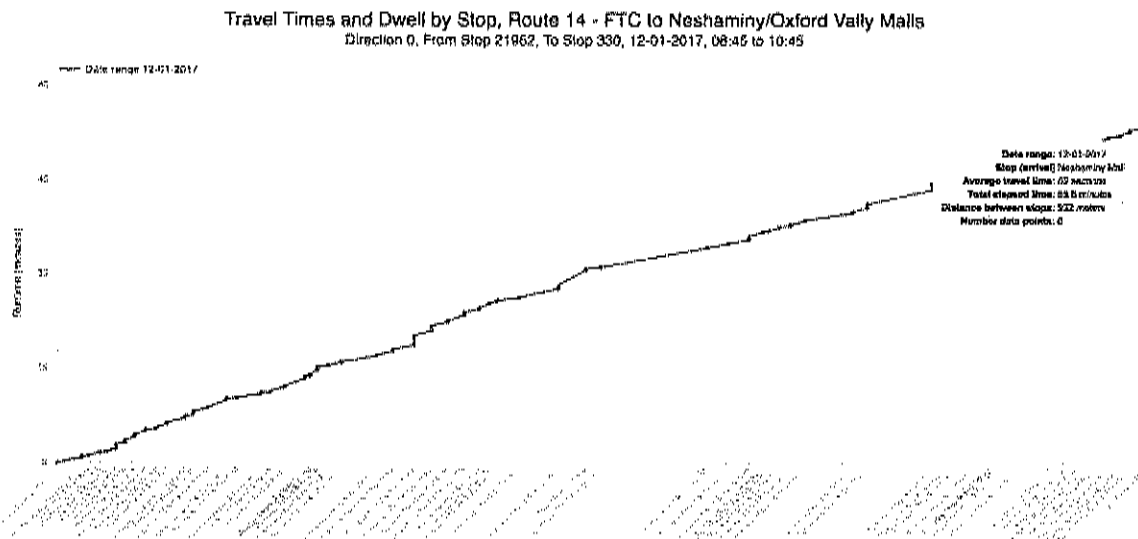
1. Light Blue - "fixed travel time": the minimum travel time while the vehicle is in motion. This is the all-green-light scenario that represents the 5th percentile of trip travel times.
2. Dark Blue - "variable travel time": the additional time spent in motion beyond the fixed travel time, as impacted by traffic, detours, red lights, etc. .

3. Purple - "dwell time": the time vehicles spend stationary within close proximity to a route stop.

These data visualizations can be used to instantly analyze schedule efficiency across thousands of trips.



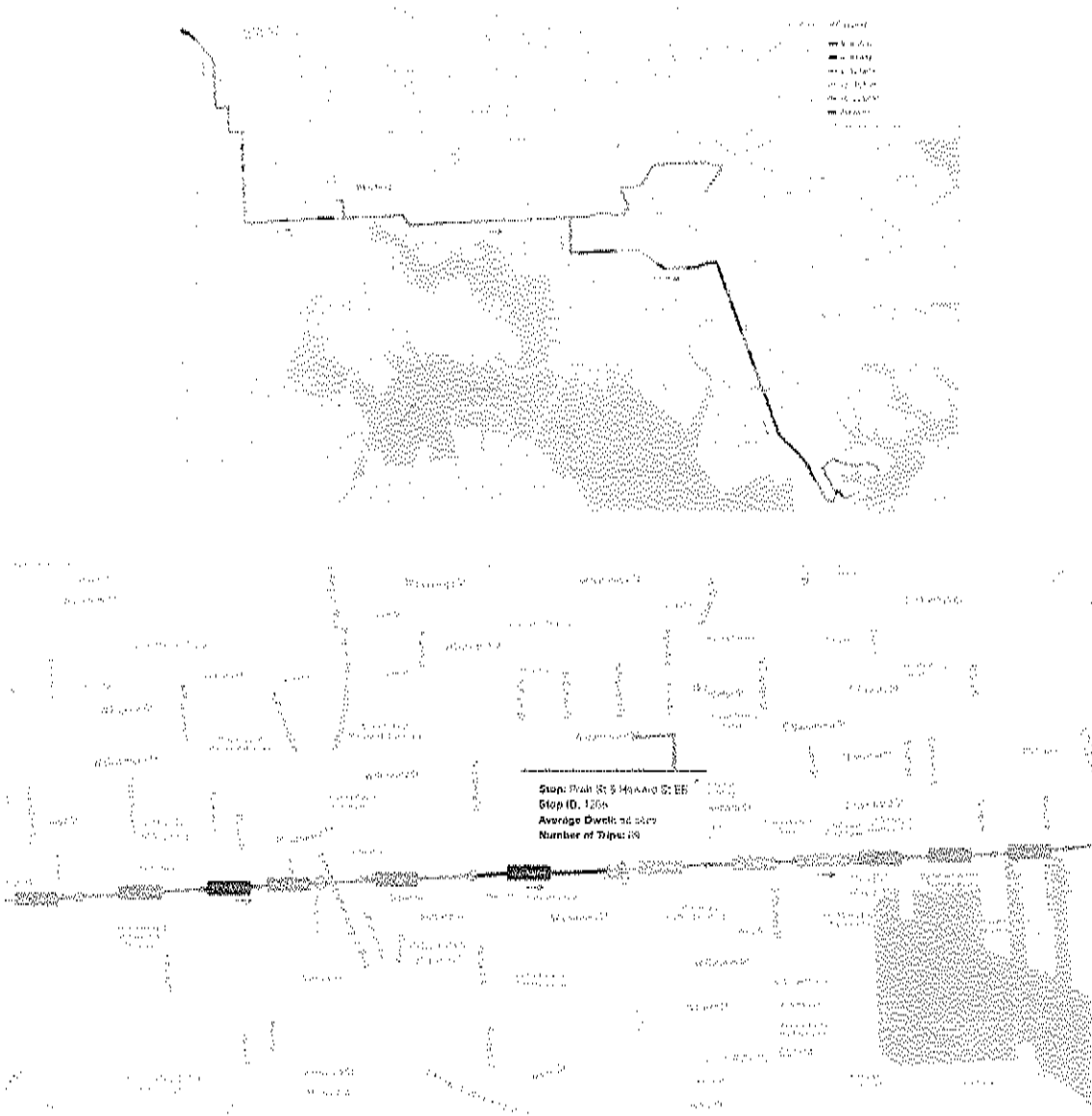
In addition to the chart above, it can be important to see how each stop contributes to the total running time of the trip. The following data view gives a stop-level breakdown of travel times between segments as well as total runtime. This view is particularly valuable for planning projects where it is important to measure the impact of stop thinning, transit signal priority, and queue jumps, and other infrastructure enhancements. You can instantly detect where slowdowns and performance issues are occurring. Additionally, as you make infrastructure investments, you can quickly perform before-after studies to better understand the impact of those changes.



Vehicle Speed Module

In addition to analyzing runtimes, the vehicle speed module enables you to quickly visualize vehicle speeds and dwell times across any corridor and over any time period. This is particularly useful to find where vehicle speeds are slowing down so that you can focus your planning efforts on the right routes and road segments. You don't always have to invest in a large project covering an entire route - it can often be more impactful to focus on the key problem areas and intersections.

Similar to traditional traffic views found in Google Maps and other mapping applications, the vehicle speed module visualizes speeds on a route through a simple color code. Segments with high vehicle speeds are colored green, moderate speeds in yellow, and slow segments in red. The map below shows where vehicle speed issues are occurring on Route during the morning commute. These locations would be prime candidates for stop relocation, queue jumps, TSP, and other infrastructure projects.



Like all Swiftly modules, you can measure how vehicle speeds change over time. This is particularly useful for measuring how performance is changing over time. Once you make a schedule or infrastructure change, you can immediately measure and quantify its effectiveness.

Customer Testimonials

We have worked with dozens of transit agencies and have demonstrated measurable results. The following are a few customer examples:

Boston MBTA

During February of 2015, Boston's MBTA experienced severe weather that caused numerous service problems. For over a month many commuter rail trains were out of service or seriously delayed. Their passengers were extremely unsatisfied with the service, which ultimately led to the agency CEO's resignation. Noticeable improvements needed to be made quickly in order to improve the customer experience. Swiftly's Transitime system was implemented, tested, and released in 10 weeks and made public in August of 2015. The real-time information proved to be significantly more accurate than the previous system that was in place, thereby greatly improving the passenger experience and reducing complaints.

"So far in testing the Transitime commuter rail predictions are much more accurate – 95% accurate for predictions of vehicle 5 minutes away, compared to 77% for the existing system. Predictions are available for a greater number of trips, sometimes much greater. And Transitime has demonstrated high reliability."

- David Barker, Deputy Director of Operations Technology, Boston MBTA

Miami-Dade Transit

Miami-Dade is the 15th largest transit system in the US. They use Swiftly Insights to better monitor and study their transit network performance.

"This is one of the smartest transit technology products I've seen. You have taken data that was previously cumbersome and overwhelming and packaged it in an incredibly clear and useful way."

- Jonathan Feldman, Planner & Scheduler, Miami-Dade Transit

RATP Dev

RATP Dev is the 5th largest public transit operator in the world with operations in 15 countries and 4 continents. They use Swiftly Insights to monitor and improve their transit network performance.

"A typical punctuality analysis is a 3-month project that requires costly equipment investments. Swiftly compresses this down to days with no new infrastructure investments."

- Tahmina Amin-Nawabi, Transport Network and Service Planner, RATP Dev

Sample Implementation Plan & Timeline

The following is an overview of a typical implementation timeline.

Napa Valley's Project Lead	Matt Wilcox
Swiftly Success Manager	Hasti Tajtehranifard

Task & Description	Who	Time From Project Start
<u>Review GTFS and GPS data (when available)</u> Swiftly staff will review your current data and notify you if changes are needed in order to create a real-time feed.	Swiftly Team	Before Notice to Proceed
<u>Data integration</u> Swiftly will integrate with your existing AVL and GTFS information.	Swiftly Team	2 weeks
<u>Perform initial internal testing</u> Swiftly will analyze and provide documented records of AVL reports, real-time prediction accuracy, and system on-time performance. Swiftly and your agency will test the customer interfaces (mobile apps, websites, etc.).	Swiftly Team NVTA	Typically 6-8 weeks ¹
<u>Launch GTFS, GTFS-rt, and customer facing web and mobile apps</u> Upon mutual agreement, Swiftly will work with your agency to launch your new passenger web and mobile apps. Launch typically includes a press release, social media assets, vehicle and bus stop advertisements, and a variety of other marketing collateral.	Swiftly Team NVTA	8-10 weeks

¹ Depends on accuracy of GTFS data

Cost Estimate

The estimated cost for a full implementation is provided below. Notes:

- Pricing is based on a 1 year contract minimum duration with 2 additional option years.
- Swiftly is currently offering a promotion for Q1 2019. If you purchase any two Swiftly Insights Modules, **get two modules free.**
- Pricing expires 60 days after this budgetary estimate was provided.
- If you decide to move forward with a full implementation, Swiftly will follow up with a separate Order Form and invoice for signature.

PRODUCT	QTY	UNIT COST	TOTAL COST
Swiftly Platform Initial Setup & Configuration	12 Routes	\$500 / Route	\$6,000 One-Time
(if purchased by March 31, 2019)		100%	-\$6,000
Swiftly Transitime			
Real-Time Passenger Information Module	36 Buses	\$28,080 / Year	\$28,080 / Year
Live Map Module	-	Included	-
Open Data APIs (GTFS-rt, JSON, XML, etc.)	-	Included	-
SMS and Voice automated services	-	Included	-
Passenger Facing Website	-	Included	-
Transitime and Insights bundle discount (if purchased by March 31, 2019)		20%	-\$5,616
Swiftly Insights			
GPS Playback Module	36 Buses	\$10,800 / Year	\$10,800 / Year
On-Time Performance Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Vehicle Speed Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Runtime Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Buy 2 modules get 2 free (if purchased by March 31, 2019)		-\$21,600	-\$21,600
Initial Training & Dedicated Customer Success Manager	-	Included	-
GTFS Data Management			
GTFS Schedule Creation	12 Routes	\$100 / Route One-Time	\$1,200 / One-Time
Ongoing Support & Google Maps Sync	12 Routes	\$300 / Route / Year	\$3,600 / Year
		TOTAL SETUP	\$1,200 One-Time
		ANNUAL TOTAL BEFORE DISCOUNTS	\$74,880
		Q1 2019 PRICING INCENTIVE (if purchased by March 31, 2019)	-\$33,216 / Year
		TOTAL YEAR 1	\$48,864
		TOTAL EACH YEAR THEREAFTER	\$47,664

General Terms

- We use a Software as a Service (SaaS) model with annual subscriptions per product. There are no hosting or maintenance fees.
- If you decide to move forward with a pilot or full implementation, Swiftly will follow up with a separate Order Form and invoice. The order form is a one-page agreement that reflects the information presented on this page.
- All contracts are bound by Swiftly's SaaS Terms of Service located at: <http://goswift.ly/saas-terms-of-service> (the "Swiftly Terms").
- Subscriptions include unlimited users within your agency.
- We believe in data access and availability. As long as your agency is a paying customer, you will have easy access to download any data from the modules you purchase.
- Every time we update the platform or launch or a new feature, your agency will automatically have access to that feature so long as you have paid for that module. Since the system is cloud-based, you will never need to download nor re-install new software. Simply log in, and you'll see the new feature!

Support Plan

- You will be assigned a dedicated Customer Success Manager.
- Your Customer Success Manager will create a success roadmap for your team, including a comprehensive onboarding process, access to online training materials, and help with your public launch for customer facing tools.
- We pride ourselves on having the best support team in the industry and we'll never charge you for our time. Always feel free to reach out with questions, comments, or suggestions on how we can better serve you. We typically respond to inquiries within 24 hours.

Technical Requirements

- Everything is hosted in the cloud – you do not need to install nor download any software.
- You can access the software from any desktop or laptop computer, anywhere, anytime.
- Swiftly works on the latest version of any browser.



Product

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SaaS Terms of Service

Last updated: May 30, 2019

These Software as a Service Terms and Conditions (together with any applicable Order Form issued hereunder, the "Agreement"), effective as of the date set forth on an applicable Order Form ("Effective Date"), is between Swiftly, Inc., a Delaware corporation, with an address at 7 Sutter Street, Suite 500, San Francisco, CA 94104 ("Swiftly"), and the Customer named in such Order Form ("Customer"). Swiftly and Customer agree as follows:

1. SERVICES

1.1. **License.** Subject to the terms and conditions of this Agreement, Swiftly (a) will use commercially reasonable efforts to host, operate and maintain the services as set forth on the Order Form, which may include the Swiftly platform (the "Platform"), the Swiftly API (the "API"), and/or other services offered by Swiftly (collectively, the "Services"), (b) grants Customer a non-exclusive, non-transferable, non-sublicensable right and license to access and use the Services and (c) grants Customer a non-exclusive, non-sublicensable and non-transferable license to use (i.e., to download and display locally) Content solely for purposes of using the Services. For clarity, unless otherwise specified by Swiftly in writing, any and all rights or licenses granted by Swiftly to Customer shall only apply to Customer and not Customer's affiliates, including, without limitation, any parent, subsidiary, or other entity controlled by or under common control with Customer.

1.2. **Access and Account Setup.** Upon execution of an Order Form, Swiftly will provide Customer with a unique login and password to access the Services web pages which are hosted and maintained by Swiftly. Customer shall be responsible for the acts or omissions of any person who accesses the Services using logins provided to or created by Customer. Swiftly reserves the right to modify or discontinue any part of the Services at any time by giving thirty (30) days' prior written notice to Customer, provided that in the event such modification or discontinuance materially reduces the functionality of the Services, Customer may terminate this Agreement upon at least thirty (30) days' prior written notice to Swiftly, and Swiftly shall provide Customer with a pro-rated refund of any pre-paid fees for Services not performed by the effective date of termination. From time to time, Swiftly personnel may log in to the Service under Customer's account in order to maintain or improve the Service, including providing Customer assistance with technical or billing issues.

Customer hereby acknowledges and consents to such access

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1.3 Service Availability. Swiftly will use commercially reasonable efforts to maintain the Service availability to send and receive data, subject to downtimes resulting from maintenance, repairs and upgrades. Swiftly will attempt to notify Customer electronically via the Service in advance of any planned downtime. Notwithstanding the foregoing, Swiftly will not be liable for any failures in the Service or any other problems which are related to (a) the Customer Content, (b) outages to any telecommunications or public Internet backbones, networks or servers, or other equipment or service outside of Swiftly's facilities or control.

1.4 Service Support. Swiftly will provide Customer with e-mail support for Customer's use of the Service during Swiftly's regular business hours. Customer agrees that Swiftly is not responsible to provide support for any issues resulting from problems, errors or inquiries related to Customer's systems or hardware.

1.5 Customer Content. As used herein, the term "Content" includes, without limitation, information, data, text, photographs, software, scripts, graphics, and interactive features generated, provided, or otherwise made accessible on or through the Services, including without limitation all Customer Content (as defined below). All Content created through or submitted to the Services by Customer (collectively "Customer Content") is the sole responsibility of Customer. Customer acknowledges and agrees that Swiftly will not assume any, and hereby disclaims all, responsibility and liability for Customer Content and any modifications thereto. Customer hereby grants Swiftly a worldwide, non-exclusive, royalty-free, fully paid-up license to use, reproduce, perform, display, modify, and distribute the Customer Content in connection with providing the Services to Customer.

1.6 Use Restrictions. Except as expressly permitted in this Agreement, Customer shall not directly or indirectly (a) use any of Swiftly's Confidential Information (defined below) to create any service, software, documentation or data that is similar or competitive to any aspect of the Services, (b) disassemble, decompile, reverse engineer or use any other means to attempt to discover any source code of the Services, or the underlying ideas, algorithms or trade secrets therein, (c) encumber, sublicense, transfer, rent, lease, time-share or use the Services in any service bureau arrangement or otherwise for the benefit of any third party, (d) copy, harvest, scrape, distribute, manufacture, adapt, create derivative works of, translate, localize, port or otherwise modify any aspect of the Services, (e) use or allow the transmission, transfer, export, re-export or other transfer of any product, technology or information it obtains or learns pursuant to this Agreement (or any direct product thereof) in violation of any export control or other laws and regulations of the United States or any other relevant jurisdiction, (f) interfere or attempt to interfere with the proper working of the Services or any activities conducted on the Services, (g) remove any copyright, patent, trademark, or other intellectual property notices, information, and restrictions contained in any Content accessed through the Services, or (h) permit any third party to engage in any of the foregoing proscribed acts.

1.7 Limitations. Swiftly will not be responsible or liable for any failure in the Services resulting from or attributable to (a) Customer use of the Services not in accordance with this Agreement or any relevant documentation provided by Swiftly, (b) failures in any telecommunications, network or other service or equipment outside of Swiftly's or its service providers' facilities, (c) Customer's or any third party's products, services, negligence, acts or omissions, (d) any force majeure or other cause beyond Swiftly's reasonable control, or (e) unauthorized access, breach of firewalls or other hacking by third parties.

2. PROPRIETARY RIGHTS

Subject to the rights and licenses expressly granted hereunder, Customer shall retain all rights, title and interest (including intellectual property and proprietary rights) in and to the Customer Content. Subject to the limited rights and licenses expressly granted hereunder, Swiftly (and its licensors) shall retain all rights, title and interest (including all intellectual property and proprietary rights) in and to the Services, the Platform, the API, all Content (excluding the Customer Content), all Swiftly trademarks, names, logos, all copies, modifications and derivative works thereof, and all rights to patent, copyright, trade secret and other proprietary or intellectual property rights therein. Additionally, all Customer (a) suggestions for correction, change or modification to the Services, (b) evaluations, and (c) other feedback, information and reports provided to Swiftly hereunder (collectively, "Feedback"), will be the property of Swiftly, and Customer shall and hereby does assign any rights in such Feedback to Swiftly. Customer agrees to assist Swiftly, at Swiftly's expense in obtaining intellectual property protection for such Feedback, as Swiftly may reasonably request.

3. CONFIDENTIALITY

3.1. Definition. Each party agrees that the business, technical and financial information, including without limitation, the Services, the Platform, and the API, and all software, source code, inventions, algorithms, know-how and ideas and the terms and conditions of this Agreement, designated in writing as confidential or disclosed in a manner that a reasonable person would understand the confidentiality of the information disclosed, shall be the confidential property of the disclosing party and its licensors ("Confidential Information"). For the avoidance of doubt, any and all data provided to Customer through the Services (other than Customer Content) shall be considered Swiftly's Confidential Information. Confidential Information does not include information that (a) is previously rightfully known to the receiving party without restriction on disclosure, (b) is or becomes known to the general public, through no act or omission on the part of the receiving party, (c) is disclosed to the receiving party by a third party without breach of any separate nondisclosure obligation, or (d) is independently developed by the receiving party.

3.2. Confidentiality. Except for the specific rights granted by this Agreement, the receiving party shall not access, use or disclose any of the disclosing party's Confidential Information without its written consent, and shall use at least the standard of care used to protect its own Confidential Information, but not less than reasonable care to protect the disclosing party's Confidential Information, including ensuring that its employees and contractors with access to such Confidential Information (a) have a need to know for the purposes of this Agreement and (b) have been apprised of and agree to restrictions at least as protective of the disclosing party's Confidential Information as this Agreement. Each party shall be responsible for any breach of confidentiality by its employees and contractors. Each party may disclose only the general nature, but not the specific terms, of this Agreement without the prior consent of the other party provided that either party may provide a copy of this Agreement or otherwise disclose its terms in connection with any legal or regulatory requirement, financing transaction or due diligence inquiry.

3.3. Required Disclosure. Nothing herein shall prevent a receiving party from disclosing any Confidential Information as necessary pursuant to any applicable court order, law, rule or regulation, provided that prior to any such disclosure, the receiving party shall use reasonable efforts to (a) promptly notify the disclosing party (to the extent legally permitted) in writing of such requirement to disclose and (b) cooperate with the disclosing party in protecting against or minimizing any such disclosure or obtaining a protective order.

4. PAYMENTS; TAXES

Customer shall pay to Swiftly fees as set forth in an applicable Order Form in accordance with the terms therein. Past due amounts shall bear a late payment charge, until paid, at the rate of 1.5% per month or the maximum amount permitted by law, whichever is less. All payments are exclusive of federal, state, local and foreign taxes, duties, tariffs,

levies, withholdings and similar assessments, and Customer agrees to bear and be responsible for the payment of all such charges, excluding taxes based upon Swiftly's net income.



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5. LIMITED WARRANTY AND DISCLAIMERS

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5.1. General. Each party represents and warrants that: (a) it has full power and authority, and has obtained all approvals, permissions and consents necessary, to enter into this Agreement and to perform its obligations hereunder; (b) this Agreement is legally binding upon it and enforceable in accordance with its terms; (c) the execution, delivery and performance of this Agreement does not and will not conflict with any agreement, instrument, judgment or understanding to which it is a party or by which it may be bound; and (d) it will perform its obligations hereunder in accordance with all applicable laws.

5.2. Customer. Customer represents and warrants that (a) Customer has all rights to grant the licenses to Swiftly set forth herein, including without limitation to Customer Content, without infringement or violation of any applicable laws or third party rights, including without limitation, any privacy rights, publicity rights, copyrights, trademarks, contract rights, or any other intellectual property or proprietary rights; and (b) Customer shall not make available through the Services any Content that is disparaging, obscene, offensive, or otherwise inappropriate or that contains any viruses or any other harmful code.

6. DISCLAIMERS

EXCEPT AS PROVIDED IN SECTION 5.1 HEREIN, TO THE FULLEST EXTENT PERMITTED BY LAW, SWIFTLY HEREBY DISCLAIMS (FOR ITSELF AND ITS SUPPLIERS) ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, ORAL OR WRITTEN, WITH RESPECT TO THE SERVICES, INCLUDING, WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF TITLE, NON-INFRINGEMENT, QUIET ENJOYMENT, INTEGRATION, MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, RELIABILITY, OR THAT THEIR OPERATION WILL BE UNINTERRUPTED OR ERROR-FREE, AS WELL AS ALL WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE OR USAGE OF TRADE.

7. INDEMNIFICATION

7.1. Customer. Customer agrees to defend against and hold Swiftly harmless from any claim by a third party that arises from or is related to (a) any Customer Content, (b) Customer's use of the Services in violation of this Agreement, and to indemnify Swiftly for settlement amounts or damages, liabilities, costs and expenses (including reasonable attorneys' fees) awarded and arising out of such claims.

7.2. Swiftly. Swiftly agrees to (a) defend against and hold Customer harmless from any claim by a third party that Services infringe a valid U.S. patent (issued as of the Effective Date), or any copyright or trade secret, of such third party and (b) indemnify Customer for settlement amounts or third party damages, liabilities, costs and expenses (including reasonable attorneys' fees) awarded and arising out of such claim. If any part of the Services become or, in Swiftly's opinion, is likely to become the subject of any injunction preventing its use as contemplated herein, Swiftly may, at its option (1) obtain for Customer the right to continue using the Services or (2) replace or modify the Services so that such services become non-infringing. If (1) and (2) are not reasonably available to Swiftly, Swiftly may terminate this Agreement upon written notice to Customer and refund to Customer a pro-rated amount of any pre-paid fees. Swiftly shall have no liability or obligation hereunder with respect to any claim to the extent based upon (i) any use of the Services not strictly in accordance with this Agreement or in an application or environment or on a platform or with devices for which it was not designed or contemplated, (ii) modifications, alterations, combinations or enhancements of

the Services not created by or for Swiftly, (iii) any Customer Content or (iv) Customer's continuing allegedly infringing activity after being notified thereof. The foregoing states the entire liability of Swiftly, and Customer's exclusive remedy, with respect to any actual or alleged violation of intellectual property rights by the Services, any part thereof or its use or operation.

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7.3 Procedures. Any claim for indemnification hereunder requires that (a) the indemnified party provides prompt written notice of the claim and reasonable cooperation, information, and assistance in connection therewith, and (b) the indemnifying party shall have sole control and authority to defend, settle or compromise such claim. The indemnifying party shall not make any settlement that requires a materially adverse act or admission by the indemnified party without the indemnified party's written consent (such consent not to be unreasonably delayed, conditioned or withheld). The indemnifying party shall not be liable for any settlement made without its prior written consent.

8. LIMITATION OF LIABILITY

EXCEPT for any breach of SECTION 3 (CONFIDENTIALITY) OR LIABILITIES TO THIRD PARTIES PURSUANT TO SECTION 7 (INDEMNIFICATION), in no event shall EITHER PARTY BE LIABLE CONCERNING THE SUBJECT MATTER OF this agreement, regardless of the form of any claim or action (whether in CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE), for any (A) interruption OF USE, LOSS OR INACCURACY of data, loss of, OR COST OF PROCURING SUBSTITUTE TECHNOLOGY, GOODS or SERVICES, (B) INDIRECT, PUNITIVE, INCIDENTAL, RELIANCE, SPECIAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF BUSINESS, REVENUES, PROFITS AND GOODWILL OR (C) damages, IN THE AGGREGATE, in excess of the amount\$ PAID TO IT (IN THE CASE OF SWIFTLY) OR PAID AND PAYABLE BY IT (IN THE CASE OF CUSTOMER) HEREUNDER DURING THE SIX (6) MONTHS PRECEDING SUCH CLAIM, EVEN IF IT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THESE LIMITATIONS ARE INDEPENDENT FROM ALL OTHER PROVISIONS OF THIS AGREEMENT AND SHALL APPLY NOTWITHSTANDING THE FAILURE OF ANY REMEDY PROVIDED HEREIN.

9. TERM AND TERMINATION

9.1 Term. Unless otherwise specified in an applicable Order Form or terminated as provided herein, this Agreement shall commence on the Effective Date and shall continue for one (1) year from the Effective Date. The term shall automatically renew for successive one (1) year terms, unless either party notifies the other party of its intent not to renew at least thirty (30) days prior to the end of the then current term. 9.2 Termination. This Agreement may be earlier terminated by either party (a) if the other party materially breaches a provision of this Agreement and fails to cure such breach within thirty (30) days after receiving written notice of such breach from the non-breaching party (ten (10) days in the case on non-payment); 9.3 Effects of Termination. Upon any expiration or termination of this Agreement, all corresponding rights, obligations and licenses of the parties shall cease, except that all obligations that accrued prior to the effective date of termination (including without limitation, all payment obligations) shall survive. The provisions of Sections 2 (Proprietary Rights), 3 (Confidentiality), 7 (Indemnification), 6(Disclaimers), 8 (Limitation of Liability), 10 (General Provisions) and this Section 9.3 shall survive.

10. GENERAL PROVISIONS

10.1 Entire Agreement. This Agreement constitutes the entire agreement, and supersedes all prior negotiations or agreements (oral or written), between the parties regarding the subject matter hereof. Any inconsistent or additional terms on any related purchase order, confirmation or similar form, even if signed by the parties hereafter, shall have no effect under this Agreement.


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10.2 Publicity. Customer hereby consents to inclusion of its name and logo in client lists and marketing materials that may be published as part of Swiftly's marketing and promotional efforts. From time to time upon Swiftly's request, Customer agrees it will provide reasonable cooperation and assistance in connection with such efforts (such as, for example, by acting as a reference, issuing press releases and writing testimonials and case studies with statements attributed to a named employee of Customer).

10.3 Modification and Waiver. No change, consent or waiver under this Agreement will be binding on either party unless made in writing and physically signed by an authorized representative of both parties. The failure of either party to enforce its rights under this Agreement at any time for any period will not be construed as a waiver of such rights, and the exercise of one right or remedy will not be deemed a waiver of any other right or remedy. 10.4 Severability. If any provision of this Agreement is determined to be illegal or unenforceable, that provision will be limited or eliminated to the minimum extent necessary so that this Agreement will otherwise remain in full force and effect and enforceable.

10.5 Governing Law. This Agreement shall be governed by and construed under the laws of the State of California and the United States without regard to conflicts of laws provisions thereof. Exclusive jurisdiction and venue for actions related to this Agreement will be the state and federal courts located in San Francisco County, California, and both parties consent to the jurisdiction of such courts with respect to any such actions.

10.6 Remedies. Except as specifically provided otherwise herein, each right and remedy in this Agreement is in addition to any other right or remedy, at law or in equity. Each party agrees that, in the event of any breach or threatened breach of Section 3, the non-breaching party will suffer irreparable damage for which it will have no adequate remedy at law. Accordingly, the non-breaching party shall be entitled to seek injunctive and other equitable remedies to prevent or restrain such breach or threatened breach, without the necessity of posting any bond.

10.7 Notices. All notices under this Agreement will be in writing and delivered to the parties at their respective addresses stated herein or at such other address designated by written notice. Notices will be deemed to have been duly given when received, if personally delivered; when receipt is electronically confirmed, if transmitted by email or facsimile, the day after being sent; if sent for next day delivery by recognized overnight delivery service; or upon receipt, if sent by certified or registered mail, return receipt requested.

10.8 Force Majeure. In the event that either party is prevented from performing, or is unable to perform, any of its obligations under this Agreement due to any cause beyond its reasonable control, the affected party shall give written notice thereof to the other party and its performance shall be extended for the period of delay or inability to perform due to such occurrence.

10.9 Assignment. This Agreement and the rights and obligations hereunder may not be assigned, in whole or in part, by Customer without Swiftly's written consent. This Agreement shall be binding upon, and inure to the benefit of, the successors, representatives and permitted assigns of the parties hereto.

10.10 Independent Contractors. The parties shall be independent contractors under this Agreement, and nothing herein will constitute either party as the employer, employee, agent or representative of the other party, or both parties as joint venturers or partners for any purpose.

11. INVENTORY PURCHASES

11.1 F.O.B. Shipping Point: All hardware (GPS, Accessories, etc.) is sold F.O.B. Swiftly's warehouse in San Francisco, CA. REQUEST A DEMO



Product

Company

Resources

11.2 Sales Tax: Inventory purchases may result in sales tax. If Customer is not tax exempt, sales tax may be added to the invoice.
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11.3 Warranty: Swiftly warrants to Customer that the GPS tracker and accessories provided by Swiftly (the "Product") contained in the original packaging will be free from physical defects in materials and workmanship for a period of ONE (1) YEAR from the date of purchase by the original purchaser ("Warranty Period"). If a defect arises and a valid claim is received within the Warranty Period, then as your sole remedy (and Swiftly's sole liability), Swiftly will at its option and sole discretion, 1) replace the Product with a new product that is functionally equivalent to the original, or 2) issue a credit for the price of such Product, in each case within 30 days following receipt of the returned Product.

To obtain warranty service, please contact Swiftly at (415) 493-9777 or contact@goswift.ly to speak with a service agent or open a service request. Please be prepared to identify the specific Product (including its serial number) and the nature of the problem. If you ship the Product for repair or replacement, we recommend that the Product must be insured, and shipped freight prepaid and securely packaged. You must call for a Return Material Authorization Number ("RMA Number") before shipping any Product, and include the RMA Number and a description of the problem you are experiencing with the Product. Any claim under this Limited Warranty must be submitted to Swiftly before the end of the Warranty Period.

This Limited Warranty does not cover any physical defects or problems that arise out of or as a result of: (a) maintenance or repairs, modifications, alterations or tampering by anyone who is not an authorized representative of Swiftly; (b) accident, abuse, misuse, transport, neglect, liquid contact, fire or other external causes; (c) operation, handling, storage, installation, testing or use not in accordance with any instructions provided by Swiftly and related to use or operation of the Product; (d) damage caused by use with another product, or (e) Acts of God including lightning, flood, tornado, earthquake or hurricane, in each case as determined by Swiftly.

This Limited Warranty gives you specific legal rights and you may also have other rights, which vary from state to state. To exercise your rights under this Limited Warranty, please contact Swiftly at:

MAIL

1 Gutter Street, Suite 500
San Francisco, CA 94104

EMAIL

contact@goswift.ly

PHONE

(415) 493-9777

GPS Tracker & Accessory Warranty: Swiftly will provide a repair or replace warranty for GPS Trackers & Accessories for up to one (1) year from the ship date.



Product

Company

United Street, Suite 500

San Francisco, CA 94104

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contact@goswift.ly

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Resources

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RESOLUTION No. 19-07

**A RESOLUTION OF THE
NAPA VALLEY TRANSPORTATION AUTHORITY (NVTA)
AMENDING THE BIENNIUM FY 2018-19 AND FY 2019-20 BUDGET TO
INCREASE APPROPRIATIONS BY \$114,409.86**

WHEREAS, the Napa Valley Transportation Authority (NVTA) is designated the countywide transportation planning agency responsible for Highway, Streets and Roads, and transit planning and programming within Napa County, and

WHEREAS, on an routine basis the Board reviews and approves a budget for all transit services including fixed route, deviated route, paratransit, and taxi subsidy as well as NVTA administration and planning, and

WHEREAS, the NVTA Board of Directors has approved a budget for fiscal year 2018-19 with \$29,039,819 in total expenditures;

WHEREAS, the NVTA Board of Directors has approved a budget for fiscal year 2019-20 with \$18,526,050 in total expenditures; and

WHEREAS, the NVTA Board of Directors has approved a contract with Swiftly in the amount of \$57,916.10 in FY 2018-19 and \$56,493.76 in FY 2019-20, and

WHEREAS, the money is available to NVTA, but an additional allocation request is needed for the disbursement of funds to NVTA.

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NOW, THEREFORE, BE IT RESOLVED, that the Napa Valley Transportation and Authority amend the FY 2018-19 and FY 2019-20 Biennial Budget and increase the appropriation of \$47,565,869 by \$57,916.10 in FY 2018-19 and by \$56,493.76 in FY 2019-20 for expenditures in fund 8300 and authorizes the Executive Director to take all necessary actions to secure indicated Federal, State, Regional, and Local resources, and to execute contracts with Member Agencies or funding entities as necessary.

Passed and Adopted the 20th day of March, 2019.

Ayes:

ChrisCanning, NVTA Chair

Nays:

Absent:

ATTEST:

Karalyn E. Sanderlin, NVTA Board Secretary

APPROVED:

DeeAnne Gillick, NVTA Legal Counsel

Swiftly Proposal for NVTA

Real-Time Passenger Information & Next Generation Transit Analytics



February 25, 2019



1 Sutter Street, Suite 500
San Francisco, CA 94104

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Summary of Project Goals

After meeting with NVTa's team, several goals have been outlined for a collaboration:

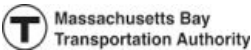
- Generate highly accurate and reliable real-time information for bus passengers
- Demonstrate that real-time passenger information can be sent to any point of rider interaction, including mobile apps, web pages, electronic stop displays, SMS systems, interactive voice systems, and more.
- Demonstrate the ability to quickly and efficiently monitor on-time performance, travel times, dwell times, and more. This data can be used agency-wide, by planners, operations, schedulers, executives, and more.
- Show how Swiftly's big data tools can be used for planning purposes - to help determine where planning efforts should be focused and to measure the impact of service and/or infrastructure changes.

Project Objective	Current Situation	Swiftly Solution	Expected Benefits
Improve the passenger experience	Current real-time passenger information is inaccurate and passengers are complaining.	Swiftly Transitime: RTPI Module	• Improve customer satisfaction scores. • Increase ridership and farebox revenue. • Reduce inbound call volume and call center costs.
Focus planning efforts on the highest yield projects.	While your agency already collects a tremendous amount of data, it is very difficult make sense of this information.	Swiftly Insights: On-Time Performance, Runtime, and Vehicle Speed Modules	• Avoid overspending on capital improvements by focusing only on the stops and intersections that require investment rather than along the entire corridor. • Improve vehicle speeds and reduce running times by targeting transit signal priority and other capital improvements on the highest yield intersections.
Easily justify capital improvements to	It is very time-consuming and challenging to justify	All Swiftly Modules.	• Quickly visualize your complex data in easy to understand ways so that

the board and to the public	transit investments, and the benefits of those investments, to the public		everyone can comprehend why you are making changes.
Improve schedule accuracy	Current systems are limited by timepoints and there is no way to see what happens between timepoints	Swiftly Insights: Runtime Module and Swiftly Insights: Vehicle Speed Module	• Understand how your agency is performing down to the stop level. • Use these insights to update and modify your route schedules. • Improve overall on-time performance.
Improve team productivity	Current teams rely on manual efforts for planning and data analysis, making projects very time consuming.	All Swiftly Modules	• Accomplish more planning projects in much less time. • Improve customer service response times through faster and easier to use vehicle replay functionality.
Help dispatcher better track vehicles	The current dispatcher interface is slow to update and hard to use.	Swiftly Transitime: Live Map Module	• Help operators better track real-time performance statistics, like headways and on-time performance.
Improve intra-agency coordination and communication	The data that exists for schedulers, planners, operations, customer service, and executives can come from different onboard systems and can be difficult to analyze.	All Swiftly Modules	• Create a single data standard that can be used across all departments. • Share simple visualizations across departments to communicate and resolve performance issues.
Use your existing hardware	New products typically required new hardware along with drilling and installation. This can be costly and time consuming.	All Swiftly Modules	• Swiftly platform works with any existing hardware. As your agency modifies or changes hardware in the future, these new data sources can be seamlessly integrated into the Swiftly platform making the system future-proof.

Return on Investment

We have worked with dozens of transit agencies and have demonstrated measurable results. The following are just a few customer examples:

Agency	How They Use Swiftly	Benefits
	• TSP and corridor analysis • Express vs. local service after study. Stop thinning and stop relocation analysis.	• Compressed a multi-month study down to weeks using the Swiftly platform. • Saved money by focusing capital improvement dollars on problem intersections rather than entire corridors.
	• Improve the quality of their real-time passenger information	• Deployed Swiftly on their commuter rail and saw an improvement in their real-time passenger information from 77% accuracy to 95% accuracy. This improvement resulted in fewer passenger complaints and a better overall passenger experience.
	• Corridor Analysis • Headway Management • Real-time passenger information	• Completed nine corridor TSP analysis studies in the time it would normally take to do one study, representing a 9x productivity increase. • Leveraging the Swiftly live map to monitor and prevent bus bunching and gaps in real-time. • Able to offer accurate, real-time ETA information via popular mobile apps, SMS, IVR, and web interfaces. • 50% reduction in passenger complaints in 2017 over 2016.

	• Real-time passenger information • On-time performance tracking.	• Saw 90% drop in the number of "where's my bus" calls since implementing Swiftly. • Used to take 3 days to address customer inquiries – this can now be done in a few minutes. • Ability to coordinate with local police when a crime is in progress using Swiftly's Live Map and GPS Playback module.
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Swiftly Overview

Swiftly, Inc. is a San Francisco based software company that specializes in big data solutions for transit, including accurate real-time passenger information systems and robust data analytics. The members of our experienced team have been at the forefront of developing customer information systems and advanced travel analysis tools for over a decade. Swiftly now works with nearly 40 transit agencies and impacts over 2 million passengers per day.

Swiftly is a cloud-based technology platform that uses a Software as a Service (SaaS) business model to provide transit agencies with a flexible, “off-the-shelf” system. Our solutions can integrate directly with an operator's existing CAD/AVL system, or supplement them with additional low-cost hardware if limited data is available. Swiftly's platform consists of two core components:

1. **Swiftly Transitime:** a system to generate accurate real-time information externally for riders and internally for dispatchers and controllers.
2. **Swiftly Insights:** a new way to leverage historical big data to improve operational efficiency and service reliability.

Agencies may opt to deploy one or many of our solutions.

Cloud-Based Software

All of Swiftly's software is cloud-based. You will never have to worry about maintenance, hosting, or downloading software updates. Your agency will automatically have the most up-to-date software with the latest features and bug fixes every time you login.

Additionally, Swiftly is constantly improving our software based on feedback from customers. If Swiftly adds a new feature for one customer in a software module you have purchased, your agency will automatically have access to that feature the next time you login. Our goal is to continually enhance the software based on feedback from our customers so that everyone can benefit from a product that gets better over time.

Scope of Work

The following sections provide more detail about the Swiftly platform and how it can help you achieve your objectives. The key items discussed in this proposal include:

- Generating highly accurate real-time passenger information to improve the rider experience. All information can be promoted to passengers through mobile applications, web pages, SMS, interactive voice response (IVR), and other systems.
- Open data APIs (GTFS, GTFS-rt, XML, and JSON feeds) so that 3rd party developers, such as Transit and Google Maps, can access real-time information for passengers.
- Insights and analytics about on-time performance and historical vehicle position playback
- Real-time vehicle monitoring tools

Swiftly Transitime

Swiftly Transitime is a system to generate accurate real-time information externally for riders and internally for dispatchers and controllers.

Real-Time Passenger Information Module

Building trust with passengers is key to increasing ridership and keeping them happy. Connect with riders where they are — transit apps, webpages, SMS, and IVR — to give them the industry's most accurate real-time vehicle predictions with Swiftly Transitime. With reliable and accurate updates, more people will catch their ride, keeping cities moving happily and efficiently.

Key Benefits:

- **Highly Accurate:** Swiftly Transitime has been independently benchmarked to be 10-30% more accurate than current industry RTPI systems. Our state of the art algorithms leverage large volumes of historical and real-time data to more accurately predict future arrival times.
- **More Riders:** Many agencies experience an increase in ridership with accurate real-time information.
- **Happy Riders:** Up to 90% of customers report greater satisfaction with transit when accurate real-time information is made available.
- **Time Savings:** Riders report an average of 2 minutes saved for wait times when real-time information is made available.
- **Swiftly Transitime supports any GPS/vehicle location system, making it low cost and easy to deploy.** You can modify or add vehicle location hardware in the future without impacting service for passengers.

Key Features:

- The system is capable of ingesting assignment information from scheduling systems, automatically assigning vehicles to routes, and also manual vehicle assignment, thereby reducing an agency's dependency on driver logins.
- The system produces open data and APIs for third party mobile and web application developers, including the common GTFS-real-time format, as well as JSON, XML, and SIRI data feeds. This means you can seamlessly send real-time information into Google Maps, Transit, and other applications.
- Riders can access real-time arrival information anywhere - through any web browser, via SMS, and through interactive voice response (IVR). Your agency will receive a dedicated phone number for SMS and voice-based inquiries. Voice-based inquiries provide audible access to real-time information, which is particularly useful for riders who are visually impaired.

Collecting & Combining Vehicle Position Data From Many Sources

Swiftly can collect and combine location data from many sources (CAD/AVL, Wi-Fi Systems, GPS Trackers, etc) to better track vehicle locations and system performance. The platform does not require any proprietary hardware to identify vehicle locations, making it flexible and future proof. Even as underlying infrastructure, such as CAD/AVL or onboard hardware is modified, Swiftly can continue to operate because it can incorporate any source(s) of vehicle position data in real-time. Additionally, as Swiftly collects more data from more sources, it becomes more accurate at tracking vehicle locations and predicting future arrival times.

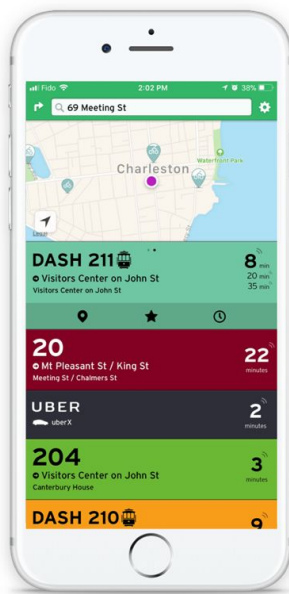
Passenger Facing Tools

Swiftly has developed a robust set of tools to help riders access real-time transit information.

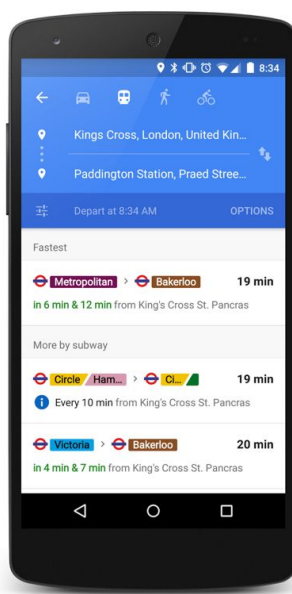
Open Data Support for 3rd Party Mobile Applications

While one mobile app can be useful, passengers often like to choose the mobile app that best supports their needs. For this reason, Swiftly provides your agency with a suite of open data tools, enabling any mobile app or apps of your choosing to integrate with your real-time arrival information. This helps you reach more riders than ever before.

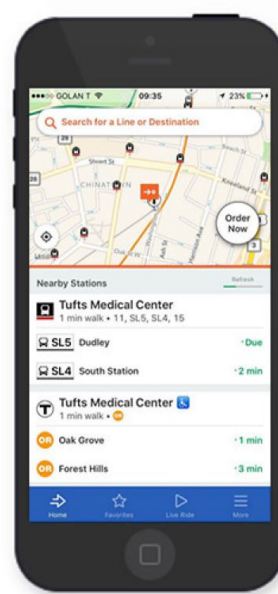
Swiftly Transitime supports all of the industry data standards for real-time passenger information: GTFS-realtime, JSON, XML, and SIRI. Common app integrations include Transit (leading North American mobile app for transit), Google Maps, and Moovit.



Transit



Google Maps

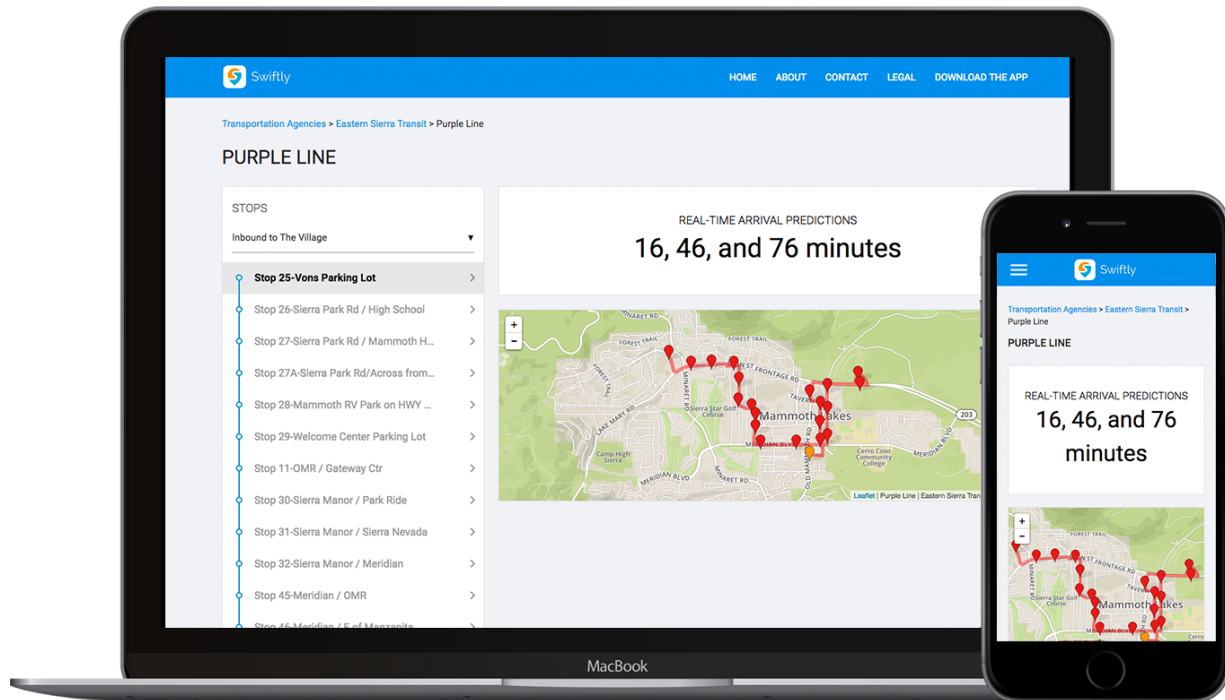


Moovit

Public Website

In addition to providing riders with access to your data via a mobile app experience, Swiftly can help you provide riders with real-time information through an easy-to-use website. The website lets users see routes that are of interest to them, including a map with the route path and real-time arrival information.

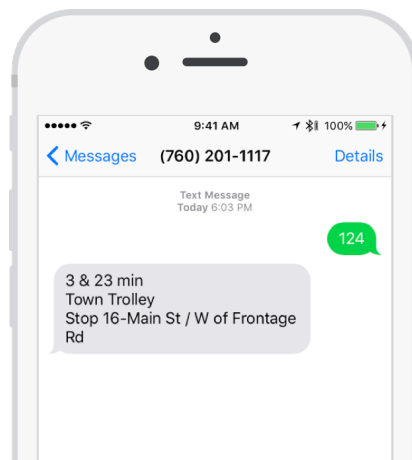
The public-facing website is fully responsive, meaning the user interface can automatically adjust and resize to provide an optimized experience on any device. If a user opens the public website on a desktop computer or mobile device, they will easily and quickly be able to access real-time passenger information.



Given Swiftly's open data APIs, all of your real-time passenger information can be made available to third party developers, allowing you the option of easily adding a different real-time information interface to your website.

SMS & Voice

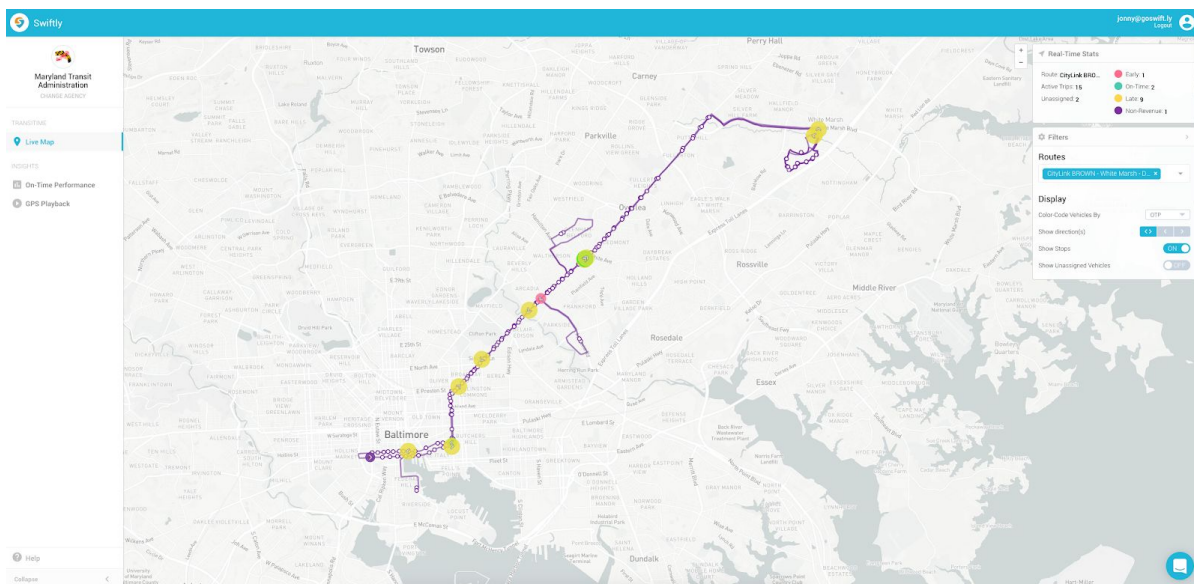
Riders can also access real-time information via SMS and interactive voice response (IVR). Your agency will be given a dedicated phone number so that riders do not need to memorize an agency key. The rider simply texts or calls in with the stop number and the system will respond with the arrival times, route name, and nearest stop location. Visually impaired riders can easily call your agency's dedicated phone number to receive arrival times through an audible response.



Live Map Module (Internal Use)

In addition to passenger facing real-time information, Swiftly provides backend management tools for your agency. Swiftly's Live Map Module is a web-based portal that lets you monitor the state of your transit network in real-time.

View schedule adherence maps to see which vehicles are running early (red), late (yellow), or on-time (green), in real time throughout the day. Or, modify the vehicle display to view live headway status to detect bunching or gaps. Click on a vehicle for more information about the route, vehicle ID, driver ID (if available), live on-time performance, live headway, etc. Monitoring your transit network has never been easier.



Key Features:

- Locate vehicles in real time on a live map
- Filter the display to one, many, or all routes
- Visualize vehicles based on direction, live on-time performance, or headway status
- Click on a vehicle for more information, including vehicle ID, route, direction, heads sign, live on-time performance, and driver ID (when available)
- While Swiftly can automatically assign vehicles to routes and use assignment information from your scheduling software, your agency can also manually assign vehicles to routes and trips through this dashboard.

Swiftly Insights

Swiftly Insights analyzes and visualizes millions of data points in seconds to help you quickly locate and resolve performance issues. Intuitive reports surface issues and are fluidly connected, showing not only problem areas, but also giving color to root causes — thus equipping planners, schedulers, and operations teams with the information they need to make more efficient and effective decisions.

Key Benefits

- Discover when and where operational issues occur
- Increase efficiency and reduce operating expenses
- Utilize insights to inform planning processes
- Improve the passenger experience with more reliable transit
- Seamlessly integrates with existing vehicle tracking systems (when data is available)

Key Features:

- Web-based analytics tool that leverages big data to provide your agency with robust historical on-time performance reports.
- Determine specifically where and when on-time performance issues are occurring. You can drill into the details to examine on-time performance by: route, stop along a route, time of day, and down to the trip and stop level.
- Perform before and after studies to measure the impact of service or policy changes. You can run on-time performance reports over two different date ranges and instantly determine if the change was successful.
- Replay historical vehicle positions as every GPS point is saved.
- Swiftly accurately calculates actual departure and arrival times by using live vehicle position information along with historical travel times. Additionally, Swiftly generates more accurate on-time performance calculations than industry average by treating the terminus differently than other stops during the route (because the terminus only has an arrival but not a departure).
- System configuration is purely GTFS based, which means that on-time performance calculations are relative to the same schedule used by passengers in Google Maps or other trip planning applications. This ensures that your performance metrics are always inline with the true passenger experience.
- Users can easily export data generated by Swiftly for additional analysis in Microsoft Excel, R, Tableau, or other applications. Your data is open and available via API or for download.

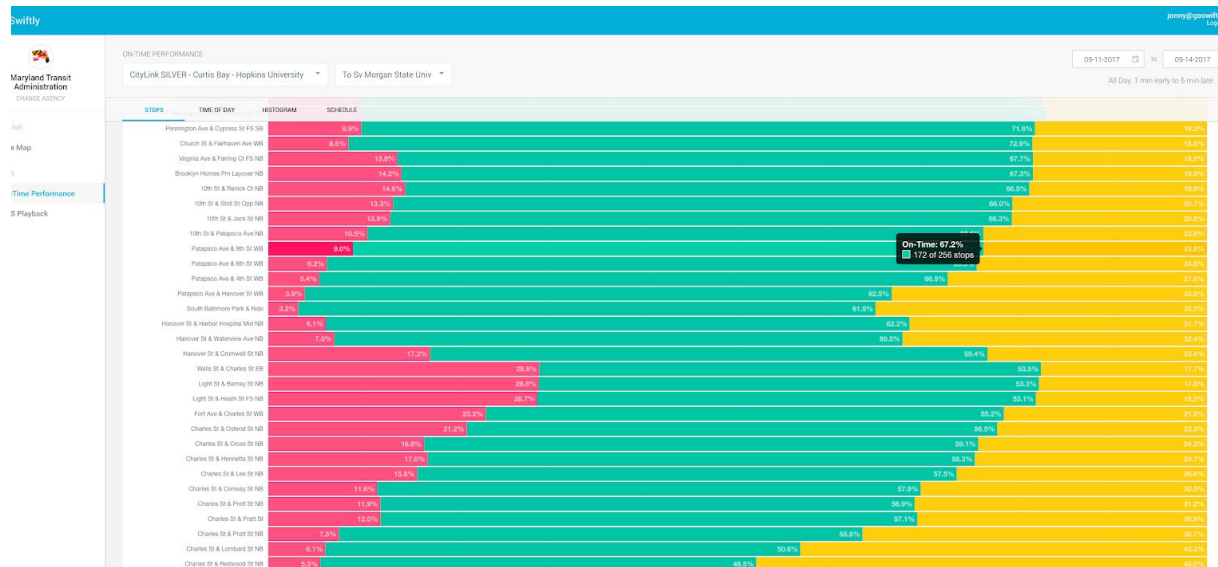
On-Time Performance Module

The following sections illustrate how the Swiftly Insights On-Time Performance module can be used to monitor and improve an agency's on-time performance. The chart below displays your on-time performance by route, showing that you can quickly determine your fleet's schedule adherence. Red represents early departures, yellow represents late

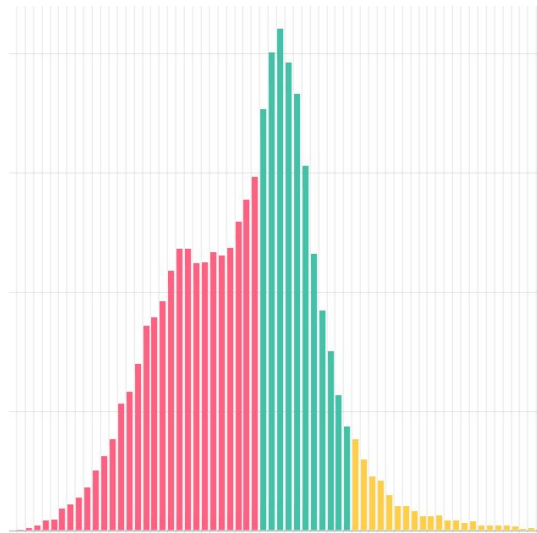
departures, and green represents on-time departures. This chart demonstrates what percentage of the time vehicles depart early, late, or on-time relative to the published schedule for each route in your transit system.



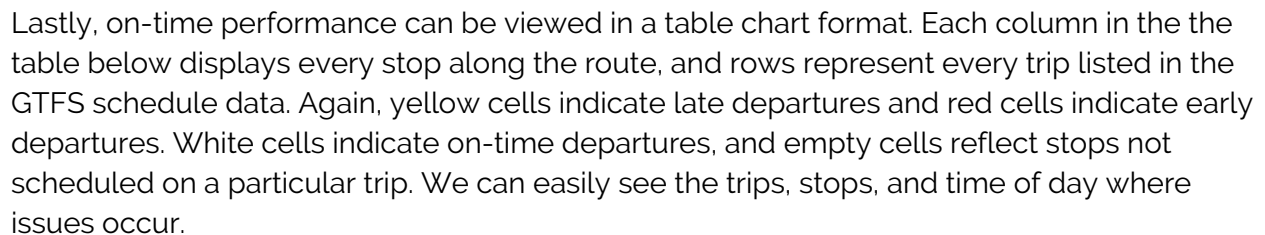
On-time performance reports can be generated for an individual route to determine which stops along the route are causing departures to fall ahead or behind the posted schedule. The schedule adherence chart below displays the on-time performance for each stop along a sample route. You can quickly determine which stops have early departure issues (red) and which tend to run late (yellow).



Additionally, if you wish to gather more information about the performance of a particular route, you can view the on-time performance distribution. This represents how early or late vehicles depart, allowing you to understand the severity of identified on-time performance issues. The x-axis shows the number of minutes early or late that the vehicle departed, relative to the published schedule, and the y-axis represents the number of stops that occurred for each departure time. Red columns represent early departures, yellow columns represent late departures, and green columns represent on-time departures.

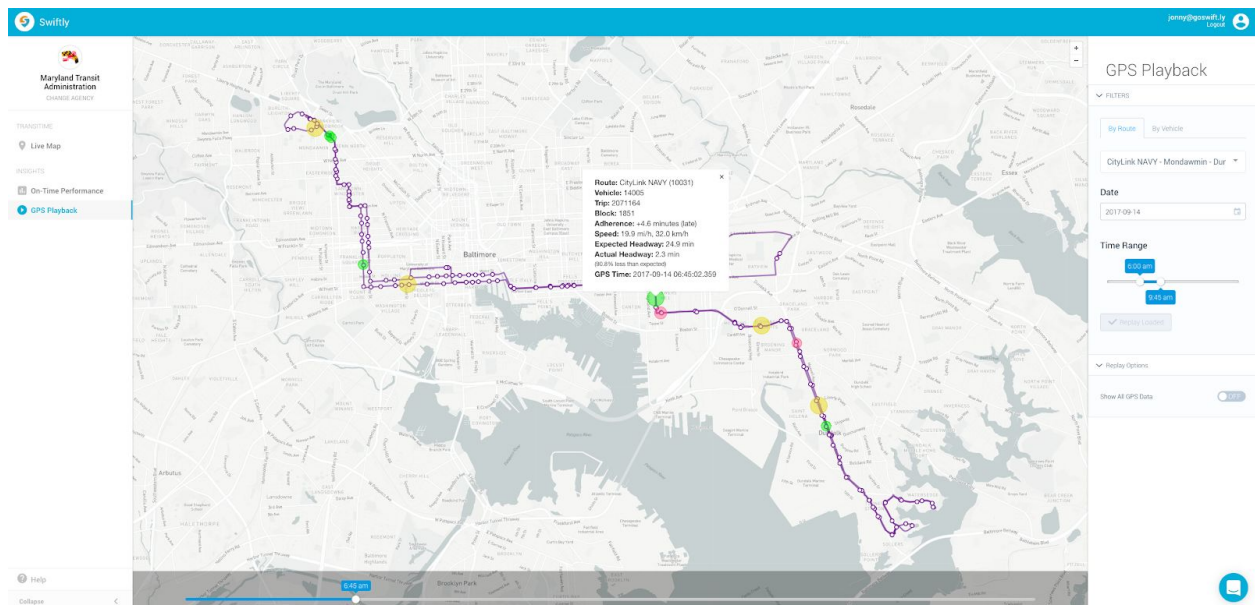


Schedule adherence data can also be displayed by time of day. The report below shows how a route's on-time performance can be impacted by the time of day. The x-axis represents the time of day, and the y-axis indicates the number of departures. For this particular chart, we have applied a filter to only show late departures so that we may determine when vehicles tend to run late. We can easily see that during the evening commute hours, the vehicles tend to run later relative to the schedule than at any other time of day.

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GPS Playback Module

Since Swiftly stores all historical GPS information from your vehicles, you can easily replay any moment in time to reveal historical schedule adherence, speeds, vehicle positions, and more. The chart below shows historical vehicle positions for a sample route. The slider at the bottom of the image can be dragged to replay any moment in time. Vehicle and route replays are immensely helpful in understanding one-off or systematic problems discovered in the On-Time Performance module and can also aid in debugging various GTFS issues.



Runtime Module

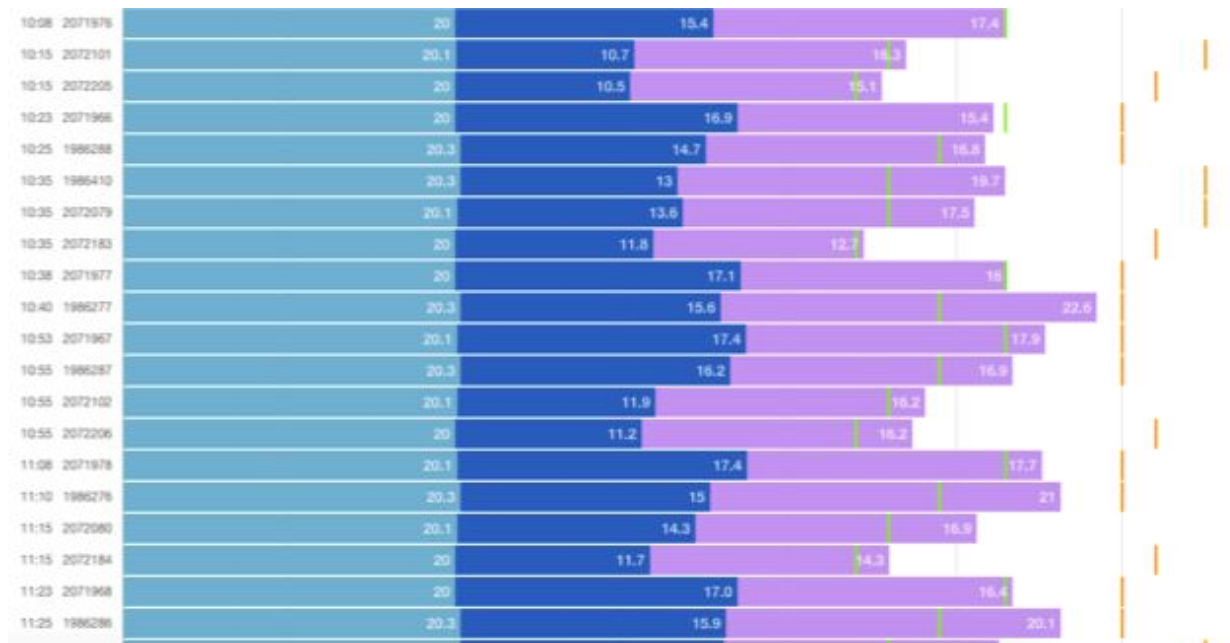
Swiftly can help you easily compare actual runtimes relative to both the scheduled runtime and next trip start time to monitor your scheduling accuracy. If scheduled runtimes are too long, you have added too much slack which can increase your operating budget while negatively impacting the passenger experience (long trip runtimes). However, if your scheduled runtime is too short, you can negatively impact drivers by reducing their allocated layover or deadhead time. Swiftly helps you instantly compare actual performance versus scheduled performance.

In the chart below, the Swiftly runtime module shows the actual runtime broken into three components, with the green line indicating "scheduled travel time" and the orange line showing the "next trip start time." The x-axis is *minutes*, and the y-axis is each trip:

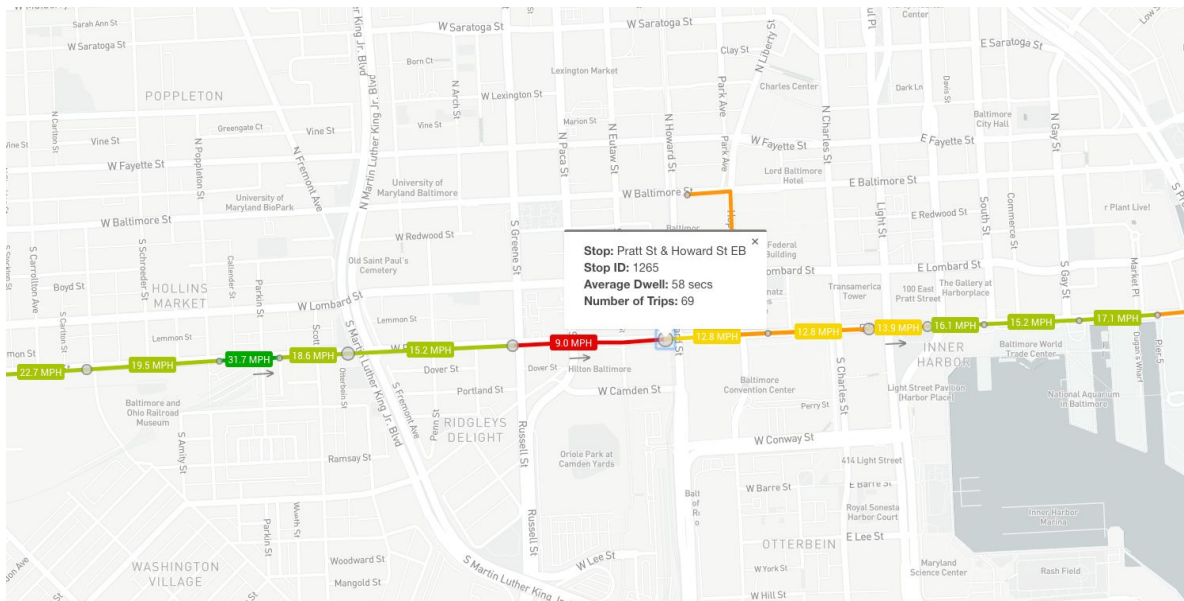
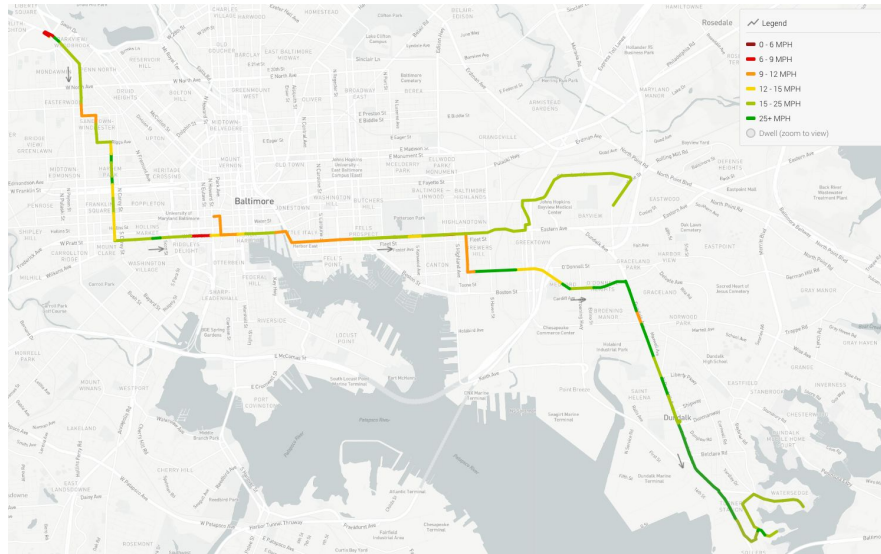
1. Light Blue - "fixed travel time": the minimum travel time while the vehicle is in motion. This is the all-green-light scenario that represents the 5th percentile of trip travel times.
2. Dark Blue - "variable travel time": the additional time spent in motion beyond the fixed travel time, as impacted by traffic, detours, red lights, etc. .

3. Purple - "dwell time": the time vehicles spend stationary within close proximity to a route stop.

These data visualizations can be used to instantly analyze schedule efficiency across thousands of trips.



In addition to the chart above, it can be important to see how each stop contributes to the total running time of the trip. The following data view gives a stop-level breakdown of travel times between segments as well as total runtime. This view is particularly valuable for planning projects where it is important to measure the impact of stop thinning, transit signal priority, and queue jumps, and other infrastructure enhancements. You can instantly detect where slowdowns and performance issues are occurring. Additionally, as you make infrastructure investments, you can quickly perform before-after studies to better understand the impact of those changes.



Like all Swiftly modules, you can measure how vehicle speeds change over time. This is particularly useful for measuring how performance is changing over time. Once you make a schedule or infrastructure change, you can immediately measure and quantify its effectiveness.

Customer Testimonials

We have worked with dozens of transit agencies and have demonstrated measurable results. The following are a few customer examples:

Boston MBTA

During February of 2015, Boston's MBTA experienced severe weather that caused numerous service problems. For over a month many commuter rail trains were out of service or seriously delayed. Their passengers were extremely unsatisfied with the service, which ultimately led to the agency CEO's resignation. Noticeable improvements needed to be made quickly in order to improve the customer experience. Swiftly's Transitime system was implemented, tested, and released in 10 weeks and made public in August of 2015. The real-time information proved to be significantly more accurate than the previous system that was in place, thereby greatly improving the passenger experience and reducing complaints.

"So far in testing the Transitime commuter rail predictions are much more accurate – 95% accurate for predictions of vehicle 5 minutes away, compared to 77% for the existing system. Predictions are available for a greater number of trips, sometimes much greater. And Transitime has demonstrated high reliability."

- David Barker, Deputy Director of Operations Technology, Boston MBTA

Miami-Dade Transit

Miami-Dade is the 15th largest transit system in the US. They use Swiftly Insights to better monitor and study their transit network performance.

"This is one of the smartest transit technology products I've seen. You have taken data that was previously cumbersome and overwhelming and packaged it in an incredibly clear and useful way."

- Jonathan Feldman, Planner & Scheduler, Miami-Dade Transit

RATP Dev

RATP Dev is the 5th largest public transit operator in the world with operations in 15 countries and 4 continents. They use Swiftly Insights to monitor and improve their transit network performance.

"A typical punctuality analysis is a 3-month project that requires costly equipment investments. Swiftly compresses this down to days with no new infrastructure investments."

- Tahmina Amin-Nawabi, Transport Network and Service Planner, RATP Dev

Sample Implementation Plan & Timeline

The following is an overview of a typical implementation timeline.

Napa Valley's Project Lead	Matt Wilcox
Swiftly Success Manager	Hasti Tajtehranifard

Task & Description	Who	Time From Project Start
<u>Review GTFS and GPS data (when available)</u> Swiftly staff will review your current data and notify you if changes are needed in order to create a real-time feed.	Swiftly Team	Before Notice to Proceed
<u>Data integration</u> Swiftly will integrate with your existing AVL and GTFS information.	Swiftly Team	2 weeks
<u>Perform initial internal testing</u> Swiftly will analyze and provide documented records of AVL reports, real-time prediction accuracy, and system on-time performance. Swiftly and your agency will test the customer interfaces (mobile apps, websites, etc.).	Swiftly Team NVTA	Typically 6-8 weeks ¹
<u>Launch GTFS, GTFS-rt, and customer facing web and mobile apps</u> Upon mutual agreement, Swiftly will work with your agency to launch your new passenger web and mobile apps. Launch typically includes a press release, social media assets, vehicle and bus stop advertisements, and a variety of other marketing collateral.	Swiftly Team NVTA	8-10 weeks

¹ Depends on accuracy of GTFS data

Cost Estimate

The estimated cost for a full implementation is provided below. Notes:

- Pricing is based on a 1 year contract minimum duration with 2 additional option years.
- Swiftly is currently offering a promotion for Q1 2019. If you purchase any two Swiftly Insights Modules, **get two modules free**.
- Pricing expires 60 days after this budgetary estimate was provided.
- If you decide to move forward with a full implementation, Swiftly will follow up with a separate Order Form and invoice for signature.

PRODUCT	QTY	UNIT COST	TOTAL COST
Swiftly Platform Initial Setup & Configuration	12 Routes	\$500 / Route	\$6,000 One-Time
(if purchased by March 31, 2019)		100%	-\$6,000
Swiftly Transitime			
Real-Time Passenger Information Module	36 Buses	\$28,080 / Year	\$28,080 / Year
Live Map Module	-	Included	-
Open Data APIs (GTFS-rt, JSON, XML, etc.)	-	Included	-
SMS and Voice automated services	-	Included	-
Passenger Facing Website	-	Included	-
Transitime and Insights bundle discount (if purchased by March 31, 2019)		20%	-\$5,616
Swiftly Insights			
GPS Playback Module	36 Buses	\$10,800 / Year	\$10,800 / Year
On-Time Performance Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Vehicle Speed Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Runtime Module	36 Buses	\$10,800 / Year	\$10,800 / Year
Buy 2 modules get 2 free (if purchased by March 31, 2019)		-\$21,600	-\$21,600
Initial Training & Dedicated Customer Success Manager	-	Included	-
GTFS Data Management			
GTFS Schedule Creation	12 Routes	\$100 / Route One-Time	\$1,200 / One-Time
Ongoing Support & Google Maps Sync	12 Routes	\$300 / Route / Year	\$3,600 / Year
TOTAL SETUP			\$1,200 One-Time
ANNUAL TOTAL BEFORE DISCOUNTS			\$74,880
Q1 2019 PRICING INCENTIVE (if purchased by March 31, 2019)			-\$33,216 / Year
TOTAL YEAR 1			\$48,864
TOTAL EACH YEAR THEREAFTER			\$47,664

General Terms

- We use a Software as a Service (SaaS) model with annual subscriptions per product. There are no hosting or maintenance fees.
- If you decide to move forward with a pilot or full implementation, Swiftly will follow up with a separate Order Form and invoice. The order form is a one-page agreement that reflects the information presented on this page.
- All contracts are bound by Swiftly's SaaS Terms of Service located at: <http://goswift.ly/saas-terms-of-service> (the "Swiftly Terms").
- Subscriptions include unlimited users within your agency.
- We believe in data access and availability. As long as your agency is a paying customer, you will have easy access to download any data from the modules you purchase.
- Every time we update the platform or launch or a new feature, your agency will automatically have access to that feature so long as you have paid for that module. Since the system is cloud-based, you will never need to download nor re-install new software. Simply log in, and you'll see the new feature!

Support Plan

- You will be assigned a dedicated Customer Success Manager.
- Your Customer Success Manager will create a success roadmap for your team, including a comprehensive onboarding process, access to online training materials, and help with your public launch for customer facing tools.
- We pride ourselves on having the best support team in the industry and we'll never charge you for our time. Always feel free to reach out with questions, comments, or suggestions on how we can better serve you. We typically respond to inquiries within 24 hours.

Technical Requirements

- Everything is hosted in the cloud – you do not need to install nor download any software.
- You can access the software from any desktop or laptop computer, anywhere, anytime.
- Swiftly works on the latest version of any browser.