

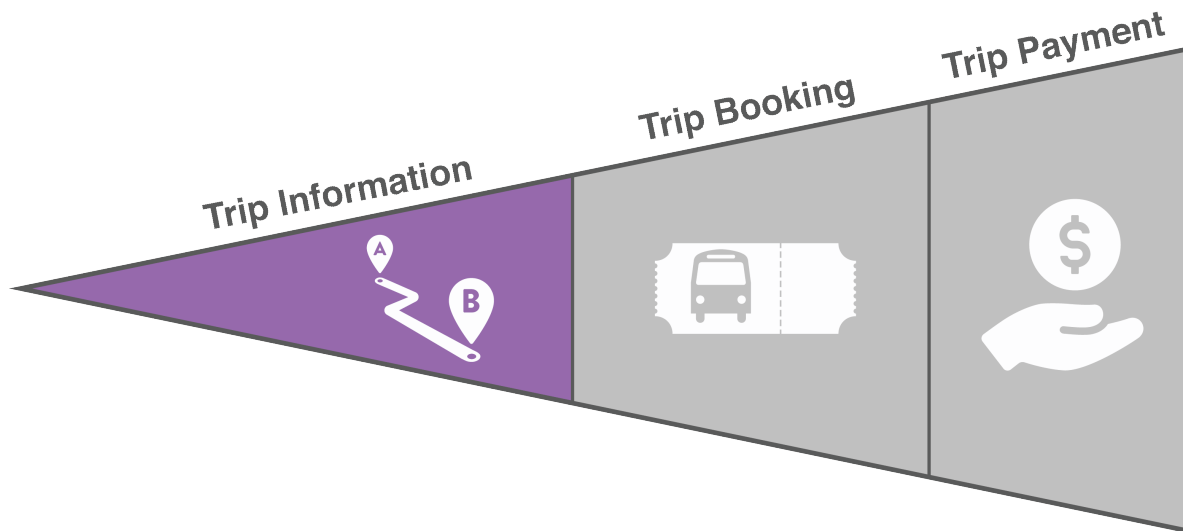
Spotlight Project for One-Call/One-Click Systems

Project Location: State of Vermont (statewide)

Project Owner: Vermont Department of Transportation (VTrans)

Publication date: February 28, 2020

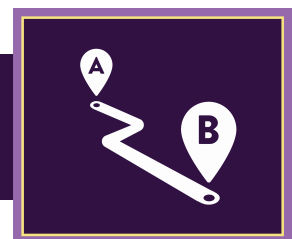
Project Background



One-Call/One-Click System Diagram for the State of Vermont

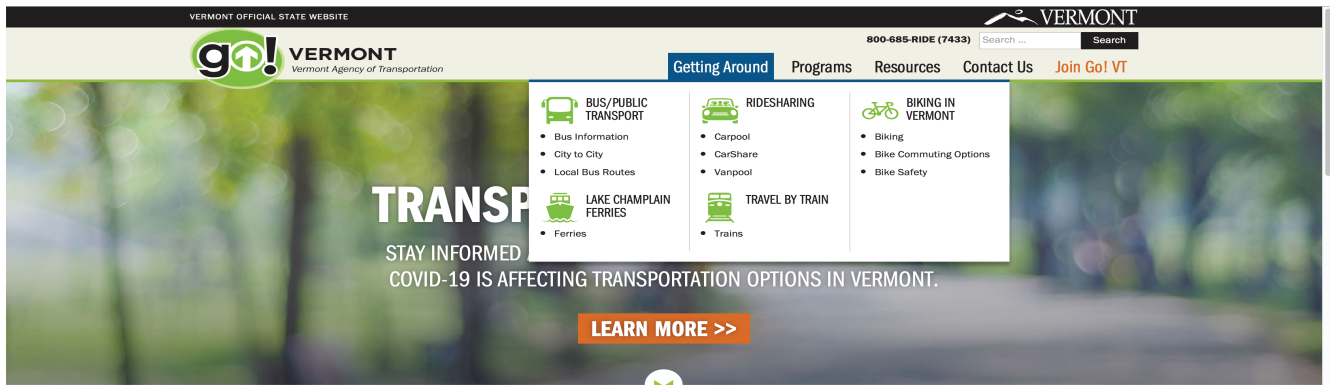
[“Go! Vermont”](#) is a robust multi-modal transportation information program for the entire state established for transportation demand management (TDM) purposes and provided by VTrans, the state’s department of transportation (DOT). [Mobility Lab defines TDM](#) as “...the flip side of infrastructure. It focuses on understanding how people make their transportation decisions and helping people use the infrastructure in place for transit, ridesharing, walking, biking, and telework.”

Trip Information



Provider Options

The Go! Vermont online resource displays information on all the transportation providers across Vermont, helping users to identify their provider options. As a part of these efforts, VTrans embarked on a mission to provide itinerary planning services for all the modes currently available in Vermont.



WELCOME TO GO VERMONT! FROM BUS ROUTES TO RIDESHARE MATCHING,
IT'S VERMONT'S BEST RESOURCE TO FIND ALL THE WAYS TO GO.

Whether you're looking for better ways to commute or to help reduce the cost and environmental impact of driving, when you [join Go! Vermont](#) you'll not only get up-to-date info, but also earn rewards! It's easy and free, so start taking the bus, walking, telecommuting, carpooling or vanpooling.

Not sure where to start?

How do I... +



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<p>GUARANTEED RIDE HOME Unexpected things come up. We've got your back!</p>	<p>PARK & RIDE Find statewide tips and other</p>	<p>ROAD CONDITIONS Current statewide road conditions, delays and closures.</p>	<p>EV CHARGING LOCATIONS Find all of Vermont's Electric Vehicle charging stations.</p>
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Screenshots of the Go! Vermont website

Itinerary Planning with Flexible Transit Trip Data

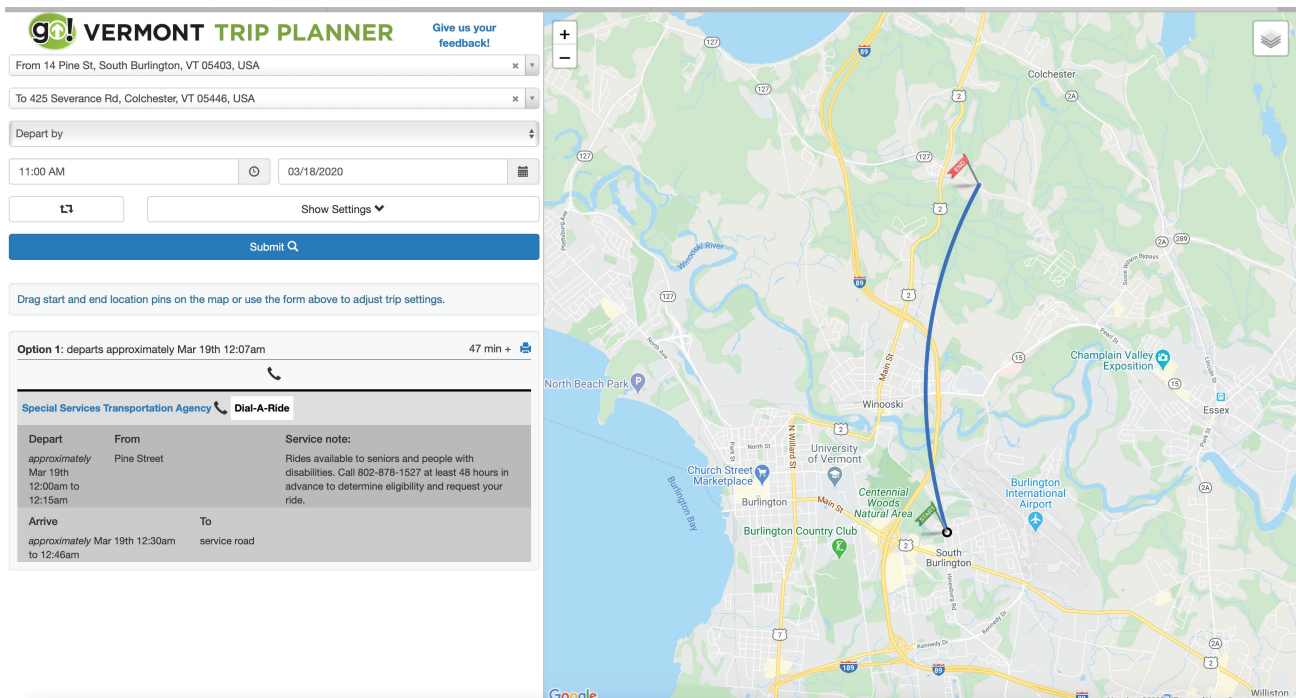
In 2014, the first step for itinerary planning was taken, which involved creating a [General Transit Feed Specification](#) (GTFS) dataset for all the transit agencies in Vermont. GTFS is a system for standardizing fixed-route public transit data that has been in use since 2005 for describing services such as bus, ferry, and passenger rail. The GTFS feeds were then provided to Google to add to Google Maps, which served as the primary transit itinerary planner in Vermont at that time. However, there was a major feature missing from the itinerary planner—the ability to plan for “flexible” transit trips that involve no fixed-route or a partial fixed-route. As a state with a large rural population, and therefore many areas with flexible transit options but fewer fully fixed-route options, this missing feature meant that transit services for only around ten percent (10%) of the geographic area of Vermont were able to be displayed.

To address this missing feature, VTrans applied and was selected for a grant through the Federal Transit Administration’s (FTA) [Mobility-on-Demand Sandbox program](#) in 2016. The grant funded the development of an itinerary planner for Vermont that included flexible transit as well as fixed-route

transit and other options. Further, as stated in [FTA's final report](#) on the project, the project goals included:

- 1) specify and develop "GTFS-flex" data for all public transit providers in Vermont
- 2) adapt OpenTripPlanner to search and visualize flexible trip plans based on GTFS-flex
- 3) work with the community of open source and open data transit developers to refine the above work
- 4) deploy a statewide trip planner demonstrating accomplishment of the above and provide a new tool for Vermont public transit riders, showing them all available services in the state

[GTFS-flex](#) is an extension to GTFS and provides a data format that works with flexible public transportation services. The GTFS-flex project began in 2016, an effort separate from the work taking place in Vermont at the time, providing an initial base for VTrans. [OpenTripPlanner](#) (OTP) is "a family of open source software projects that provide passenger information and transportation network analysis services" that began in 2009. In 2016, OTP did not yet have a way to display GTFS-flex data and flexible transit trip results. Building upon the OTP software and GTFS-flex data format, the statewide trip planner was delivered to the public in early 2018. By adding flexible transit services, the itinerary planner is now able to show transit services for more than eighty percent (80%) of the geographic area of Vermont as opposed to only ten percent (10%) previously. All the transit agencies in Vermont now have a [GTFS-flex feed](#).



Screenshot of the Go! Vermont Itinerary Planner

Open Source Software

Open source software is software that is released to the public under license terms that allow anyone to alter and reuse the software code with no fee needing to be paid to the software's original creators. As a result, anyone can set up their own "instance," or version, of the software. They can then add their own data, and in some cases even adapt the code to fit their needs, within their own instance. In addition to open licensing terms, successful and mature projects such as OTP have a community of software developers and users around them that make it easier to maintain and improve the software over time.

The VTrans project sought not only to address the challenges with missing flexible transit services in itinerary planners in Vermont, but also for the wider community of itinerary planner users outside of Vermont. As the Shared Use Mobility Center (SUMC) [describes it](#), “the changes made to OpenTripPlanner code were then submitted back to OpenTripPlanner’s main branch and to the GTFS-flex Github repository, meaning that these adaptations are now available for use by any party, which helps accelerate duplication efforts among other agencies going forward.” This has already provided benefits to many others, demonstrating the multiplier effect that highly successful FTA grants can have. [FTA’s final report](#) on the Vermont grant project lists several agencies that have plans to leverage the results and contribute funds to support their own efforts, and elaborates further, “...the investment made by FTA has allowed agencies to launch platforms that were otherwise unthinkable and have been followed by additional investments greater in magnitude than the funds contributed by FTA.” Further, “...at least four regions, including dozens of agencies, have implemented beta or production trip planners using the technologies developed in Vermont. Additionally, three other state DOTs have initiated plans to develop GTFS-flex data for statewide transportation providers.”

Accessibility Features and User Counts

It is important to note the accessibility features of Vermont’s itinerary planner, which received an “AA” rating through the rating system for [Web Content Accessibility Guidelines](#) (WCAG). From its launch in February 2018 through November 2019, the itinerary planner website had a total of 6,309 users and averaged around 1.3 sessions per user as reported in [FTA’s final report](#).

Phone-based Services

A significant benefit of itinerary planners is that they can be used to assist with phone-based services. For Vermont, the main phone-based service associated with the project is Go! Vermont’s call center supporting various types of transportation-related information. As explained in [FTA’s final report](#), “The Go! Vermont call center operationalized the Go! Vermont Trip Planner soon after launch and consistently uses it to help call center representatives direct riders to the appropriate services for their needs. Both transit providers and Go! Vermont call center staff have communicated that potential riders are actively on the trip planner as they call them. This has allowed riders to quickly get to the specific option and accommodations needed and/or issues to be assuaged.” Additional phone-based services across the state that use the itinerary planner include [Vermont’s 2-1-1 system](#), [VocRehab Vermont](#), the [Vermont Center for Independent Living](#), and others.

Real-time Information

In an effort complementary to trip planning, VTrans encourages the use of [Transit app](#). While the itinerary planner provides trip itineraries (i.e., from static data on planned routes), Transit app provides real-time updates (i.e., real-time data on actual vehicle locations). The two support a user by helping them first figure out which itinerary works best and then being able to check more precisely when the transit vehicle will arrive. VTrans considers this third-party app a part of the Go! Vermont menu of related services and has a contract with [Swiftly](#) to manage the work connected with the app and data for Transit app.

In short, Vermont’s itinerary planner has two key elements that set it apart from most itinerary planners at the present moment—statewide data on flexible transit options and an open source itinerary planning software that displays flexible transit options to users.

Support

Three factors stand out as providing support for the project. First, FTA's Mobility-on-Demand Sandbox grant gave the project a significant portion of the financial support it needed. [As explained by](#) the Shared Use Mobility Center (SUMC), "In sum, VTrans received \$480,000 from the FTA, and contributed \$120,000 of its own funds. An additional \$10,000 from the state was spent on outreach activities, and another \$35,000 spent to promote the tool through media buys and additional outreach through fiscal year 2020 ... VTrans continues to pay \$30,000 annually to Cambridge Systematics for maintenance of the online portal."

Second, VTrans credits the support of the Vermont Secretary of Transportation and Vermont House and Senate committees and their continued prioritization of public transit in their budgeting activities as major success factors. This has provided VTrans with a solid foundation from which to grow its transit-related efforts.

Third, the itinerary planner plugs into a broader offering, providing it with a branding base and complementary efforts. The Go! Vermont program is a wider effort that serves users by explaining all the transportation options across the state and connecting users with various transportation services (e.g., carpool/vanpool, rides for veterans, and others). Further, Go! Vermont has brand recognition in the state, so communication activities for the trip planner can leverage existing awareness.

Challenges, Maintenance, and Future Plans

Itinerary Planner Base Map

When the itinerary planner was first launched, an issue was encountered with the initial selection for the base map. VTrans planned to use OpenStreetMaps for map display, but users testing the beta version reported that the software would feel more familiar and easier-to-use with Google Maps as the base map. Based on this feedback, VTrans decided it would be best to move forward with Google Maps.

User Base Growth and Marketing

VTrans has reported that the itinerary planner's user base has not grown as much as they would have expected between February 2018 and November 2019. To counteract this trend, VTrans is preparing to run a statewide marketing campaign including placements on TV and the web in an effort to increase awareness, encourage giving it a try, and provide information on other Go! Vermont services. Before launching the campaign, VTrans is planning to first incorporate carpool and vanpool services into the platform with a planned launch date of April 2020.

Maintenance Planning

As mentioned under "support," VTrans plans to pay \$30,000 annually to Cambridge Systematics for maintenance of the itinerary planner.

Adding More Transportation Options

As mentioned under “user base growth and marketing,” VTrans plans to incorporate carpool and vanpool services into the itinerary planner and launch by April 2020. In addition, another phase of work will involve adding airport shuttles, taxi companies, and Transportation Network Companies (TNCs) such as Lyft and Uber by December 2021.

Increasing Functionality to Include Eligibility and Requirements

Further, VTrans anticipates increasing the functionality of the flexible transit services displayed in the itinerary planner by adding in the ability to better match itinerary results taking into account a user’s trip requirements (e.g., wheelchair accessibility, ability to include travel companion, and others) and a provider’s service capacity to meet those requirements. The agency also plans to enable eligibility factors to be taken into account (e.g., age, veteran status, disability, and others), which may indicate the potential for a user to be eligible for a specialized service. VTrans anticipates delivering this functionality by December 2021.

Moving into Trip Booking

In addition, VTrans plans to move the platform from trip information into trip booking in the future as explained in [FTA’s final report](#), “customers will be able to plan a trip and then immediately book the flexible leg of that trip by clicking a ‘Book Now’ button using an account-based system that would integrate not only direct payment from the user but also subsidy sources.” This phase of work would take place during 2022 with anticipated delivery at the end of 2022.

Related Materials & Contacts

[FTA’s Final Report](#) “Mobility on Demand (MOD) Sandbox: Vermont Agency of Transportation Flexible Trip Planner” and a Shared Use Mobility Center (SUMC) [case study on the itinerary planner](#) are key resources to find out more about Vermont’s effort. These resources go into detail on the process of developing the software, stakeholder outreach, project management activities, and other topics. Each resource also has a list of related references, providing further details.

For additional information, contact the Program Manager at VTrans, Dan Currier, at dan.j.currier@vermont.gov.