CDTA.org
Design Analysis and Proposal

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Introduction

Imagining CDTA.org As a Product

We re-imagined the CDTA website as a product, focused on utility, that would enable users to access the information they need most with as little friction as possible. It's apparent from the data, that the overwhelming majority of users are coming to the website to view schedules, so the primary focus of any redesign efforts should be centered around the "Schedules" portion of the site. The user is central to the development of any product, especially one for an organization like the CDTA, that seeks to provide excellent service to customers every day. Just as the experience with the CDTA reflects service and function, we designed solutions that enabled the CDTA website to create the same experience online.

People travel for all sorts of reasons, sometimes for things that make them happy, sometimes for things that don't; we don't always know why people are traveling, but we do have the power to create technology that simplifies the experience of doing so. The goal of creating a product like the one we have is to put powerful tools in the hands of people traveling, or interested in the CDTA, and in doing so, we hope to improve the quality of life of anyone who uses it. In a world with so many everyday complications, the last thing anyone needs is for travel, and the accompanying tools, to be complicated.

Approach

User-Centered Design

Our approach to design is to create something that meets the needs of the people who use it. In order to do this, we need to understand what people want to achieve with the CDTA website, and how they are currently using it. Fortunately, we have an immense amount of data available, and data is the valuable feedback that users leave behind as they accomplish their goals. From the data provided to us, we were able to draw some essential conclusions about the way the CDTA website is used currently, which gave us invaluable insight into goals of our users.

An overwhelming percentage of users coming to the site were doing so for “Schedules”. Put simply, the general conclusion can be drawn: “People come to the CDTA website for bus schedules.” Next, just under 50% of users of the site in 2012 were visiting on a mobile device, and that percentage as of September of 2013 had increased to 66%, so the conclusion can obviously be drawn: “Most people are coming to the website from a mobile device.” These patterns of use show where to prioritize efforts in designing a product that meets the users’ needs, so we combined these two statements to create an essential assumption that is derived directly from the data: “Most people using the CDTA website are using it on a mobile phone to find bus schedules.”

These things may seem trivial, but in order to model our design process and attention to detail, we needed to discover these patterns and let them inform our design of some of the key aspects of the CDTA site. The data led us to prioritize the mobile experience over other experiences, in order to best meet users’ needs.

The metrics on website usage helped to paint an informative but still incomplete picture of the way the CDTA site is used, so we created user profiles to explore their needs. These user profiles were based off of real and fictional people who may or may not use CDTA and may or may not use the web site. We gathered anecdotal information on the bus riding and schedule checking experience, as well entered into the shoes of our fictional user profiles to see things from their perspective. Understanding others’ perspectives is key to eschewing bias and creating a usable experience.

After thoroughly analyzing the data, and exploring users needs through the use of personae, we were able to gain an understanding of the CDTA and the accompanying website, and wanted to redesign the core aspects of the CDTA website to showcase our ability to 1) update the aesthetics of the website as well as 2) review the information architecture of the website and overall design of products and tools. To demonstrate this concisely, we’ve redesigned two key aspects of the user experience; we’ve overhauled the mobile “schedules” experience, and the desktop experience of navigating and consuming content of interior pages of the site.

“We’ve overhauled the mobile schedule experience, and the desktop content consumption experience.”

Challenges of Responsive Web Design

Considerations for Effective Mobile Strategy

Responsive Web Design(RWD) is an innovative solution to the problem of laying out websites and user interfaces across devices, including those that don't exist yet. At the core of RWD is the Mobile First philosophy, which is immensely important as it forces you to re-imagine your content and information architecture in a purely hierarchical format, since small devices really only have the ability to scroll up and down, not left to right as larger devices. RWD helps to unify code and content across the different devices people experience a given website on.

What RWD fails to address, however, is the differing goals that users have across devices. RWD may solve the problem of how to render a given page on a smartphone, but it fails to address fundamental discrepancies with users' concerns between devices. In our case, if a user is going to the CDTA website to look at schedules from their smartphone, the odds are that they are out-and-about, and there is some immediacy to the information they require. In all likelihood, it is not the goal of the mobile user to read about the inner-workings and corporate structure of the organization, but rather simply to use something that will help them get where they need to go. It is for this reason that we've tailored the experience on smaller width devices to favor the "schedules" functionality over others. This may be counter-intuitive from a strictly RWD perspective, but along the way we let the technical aspects of RWD and good front-end engineering practice inform our design decisions. RWD may espouse a seamless experience between devices, but it is not wise from a compassionate or business perspective to let any particular design or development philosophy ignore reality.

Of additional concern, is the problem of increased page weight with decreased bandwidth. If it's not controlled, RWD can increase page weight, as you are downloading stylesheets for multiple device widths, in addition to excessively large images for smaller displays. This increases page weight, especially on first load when resources aren't caches. Simultaneously, it can be assumed that a large portion of mobile users are experiencing the site while they are "out-and-about" meaning while using cellular data. This not only throttles their bandwidth, but runs up their data limits, again, for images/styles they may never even use. If the page weight of the initial load on slow cellular data is a bad enough experience, the user may abandon altogether, thereby accomplishing the exact opposite of what RWD came to solve: creating a good mobile user experience.

It is for these reasons that it's important to be open to the use of feature detection in conjunction with RWD, as well as RESS (Responsive Design + Server-Side components). In this manner, you can use feature detection to tailor experiences based on the capabilities of the device, and use RESS to control what resources get delivered, from the server, to ensure users are not punished unfairly for loading your page. In these instances, performance is very much a part of the user experience, and it's important to be realistic about the obstacles that RWD presents in a project like this where users' goals vary by platform and screen size.

Intro to Mobile Flow

Recap of Intentions

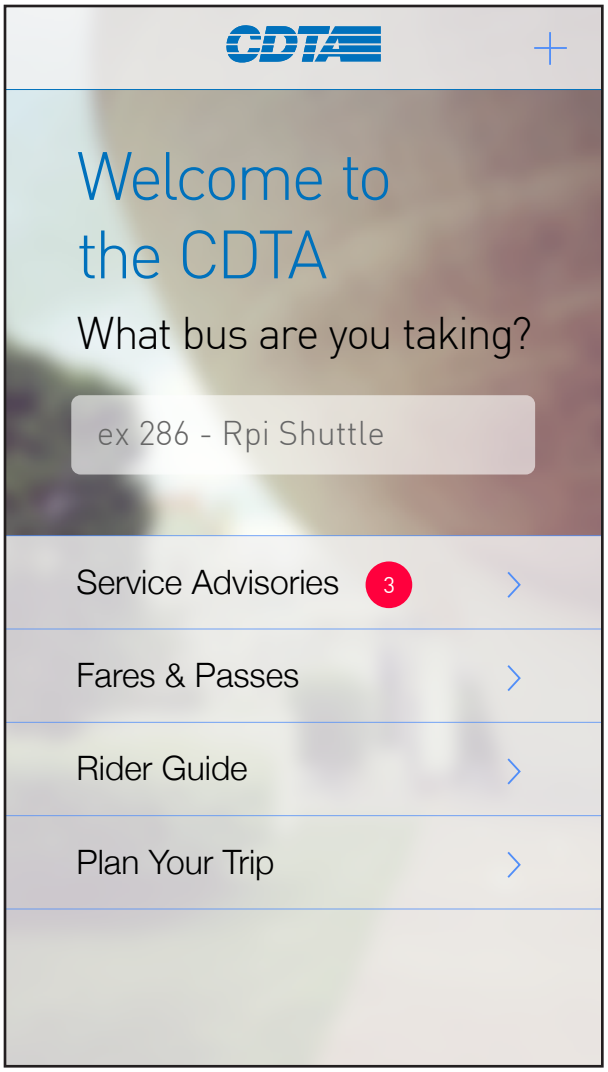
Through our analysis of the provided data, our own experience taking public transportation, and the creation of a variety of user profiles, we strongly believe that most users of the CDTA rely on the CDTA site for schedules, specifically to determine when they need to be prepared to catch their bus. We believe they are more likely to use services like Google Maps to determine how to get from “point A” to “Point B” – which bus to take and where to get on and off. People often plan their routes ahead of time and don’t worry about specific times until they are impending. Therefore when a user needs to look at a bus schedule that need is immediate. By focusing the mobile design around scheduling and eschewing trip planning the CDTA site can better address the greater needs of it’s users.

Home

Screen One

The data provided and our own experience using the CDTA support the assumption that users visit the mobile CDTA site primarily to access schedules. Users are most often looking to see when a specific bus will arrive at a specific stop. They are usually concerned with a stop that they are physically close or even en route to, and so they are focused on a fairly immediate time frame. We therefore designed the homepage with an emphasis on making the process of finding out when a specific bus will arrive at a specific stop as smooth and simple as possible.

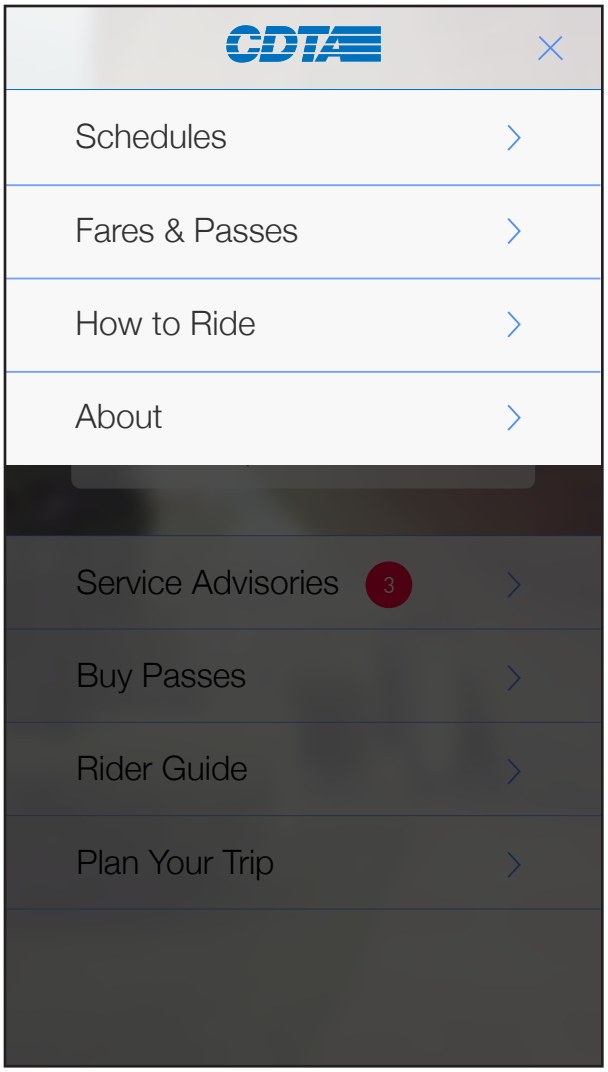
The design achieves this low level of friction by first orienting the user to the overall product and then immediately prompting them to take action. The first thing a rider of a bus has to decide is which route to take, so this is the first thing the site asks them to fill out.



Home Cont.

Screen Two

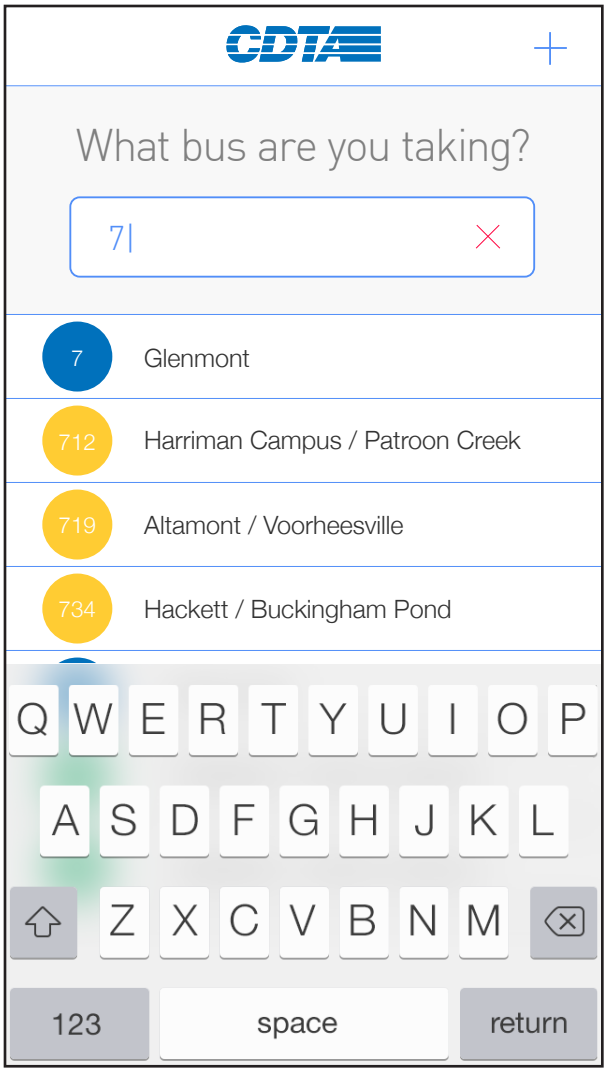
The design maintains the basic organizational structure of the site as viewed on a larger screen. Primary navigation is collapsed into a drop-down menu accessed by tapping or clicking on the plus in the upper right corner (see screen two). Other links are collapsed into a list view. This content is prioritized based on how much the information could potentially impact a rider's actions.



Selecting a Route

Screen Three

Once the user focuses in on the text field it is animated to the top of the screen, the background solidified and a list of all CDTA routes filled in. At this point the user could decide to type nothing in the field and scroll through the list to find the desired route or begin typing the route name or number which would filter the list based on relevance.



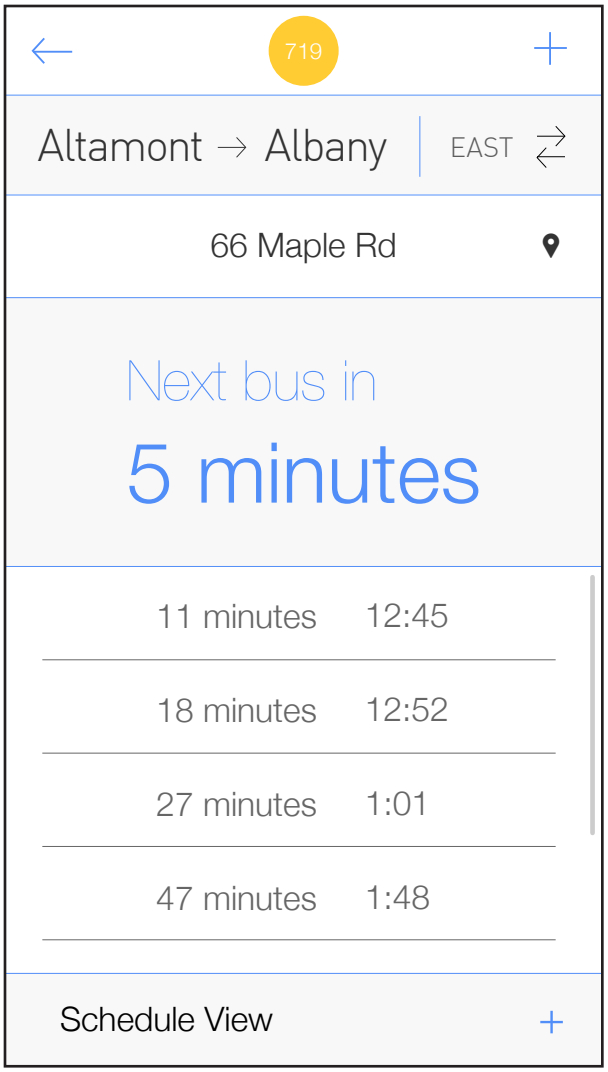
Next Bus View

Screen Four

Once the user selects their route they are brought to this view which is designed to most efficiently communicate to the user the information they are most interested in – how much time they have until the bus arrives at the stop they are at or on their way to and when the buses after that will come.

In order to reduce friction in the process of delivering this information, the site uses the geolocation API to initially show the user information for the bus stop they are closest to while also predicting the direction in which they are traveling. If the use of this API should fail or if the user is interested in a stop that they are not close to they can tap on the route to bring up a list of all the stops from which they can select the one they're interested in (see next screen). The user can also easily toggle the route direction by tapping the direction label above the stop name.

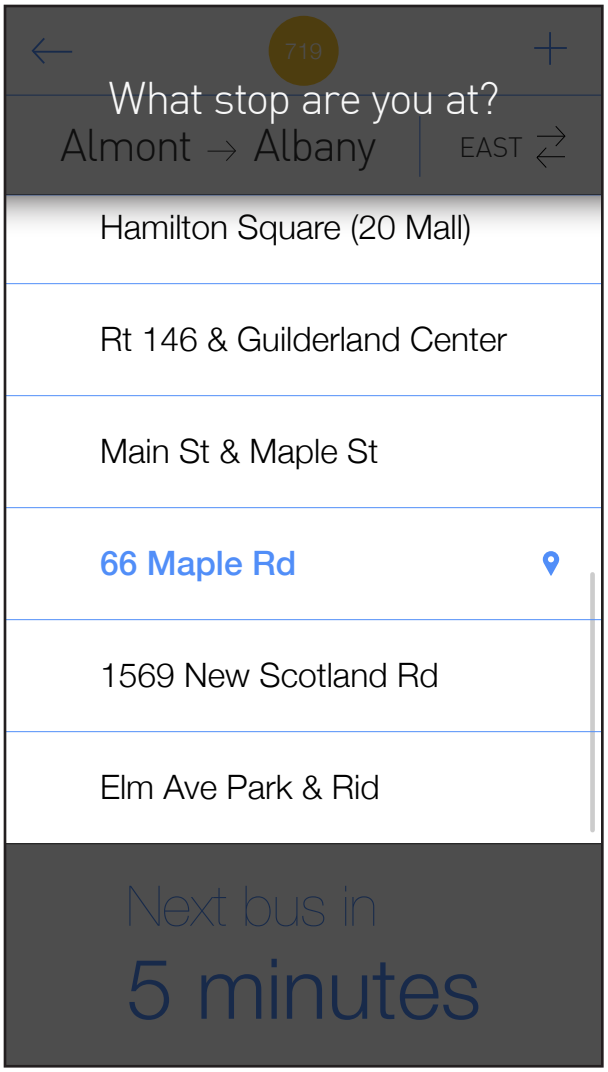
From the bottom of this page the user can access more general schedule information for weekdays and weekends (see screen six).



Selecting a Stop

Screen Five

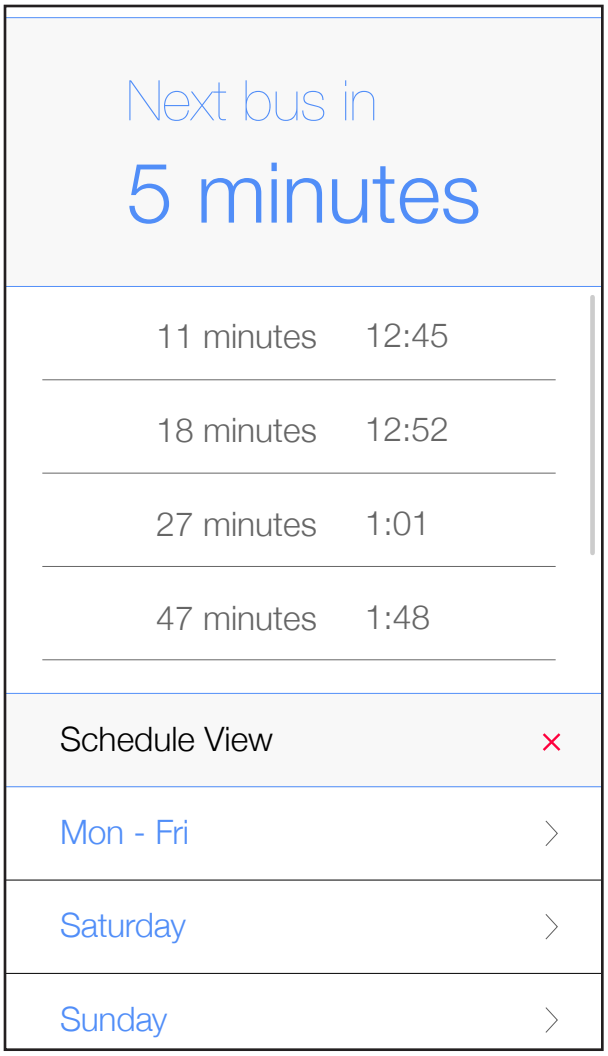
When the user taps on the name of the stop, a list of all the stops on that route is shown with the background greyed out to preserve the user's sense of place within the site.



Schedule View Menu

Screen Six

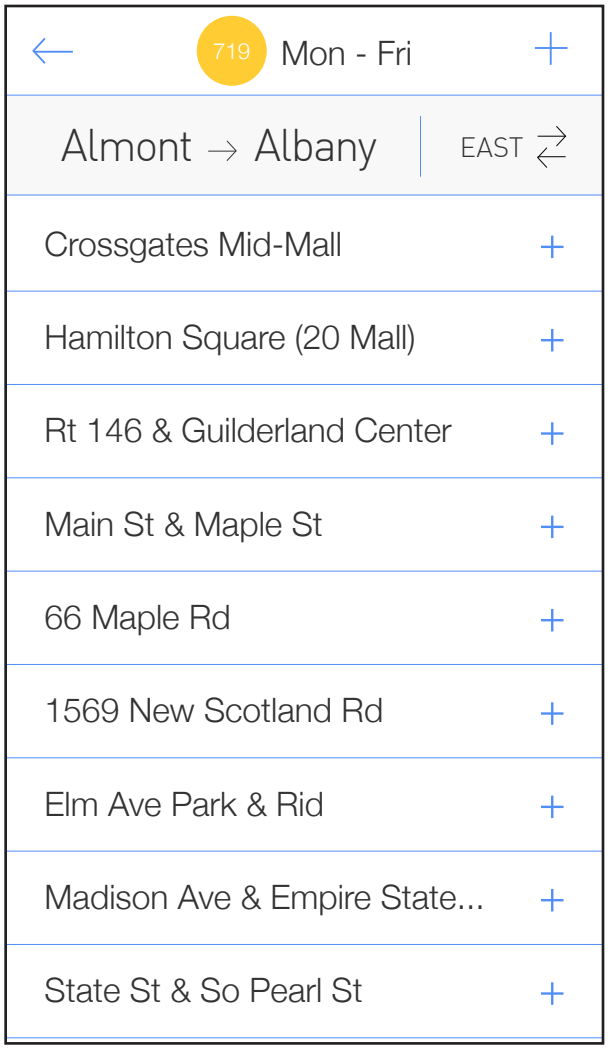
Some users may want to access more general schedule information for a future date or time. Tapping or clicking on “Schedule View” expands a menu giving the user access to schedule information for weekdays, Saturday and Sunday. We chose to give weekday schedules the label “Mon - Fri” as opposed to “weekday” to quickly differentiate it from “weekend”, because it is easier to map a range of days to the current day of the week and to keep the naming convention consistent i.e. naming the day instead of classifying it as weekend or weekday. This further reduces friction of use.



Mon - Fri Schedule

Screen Seven

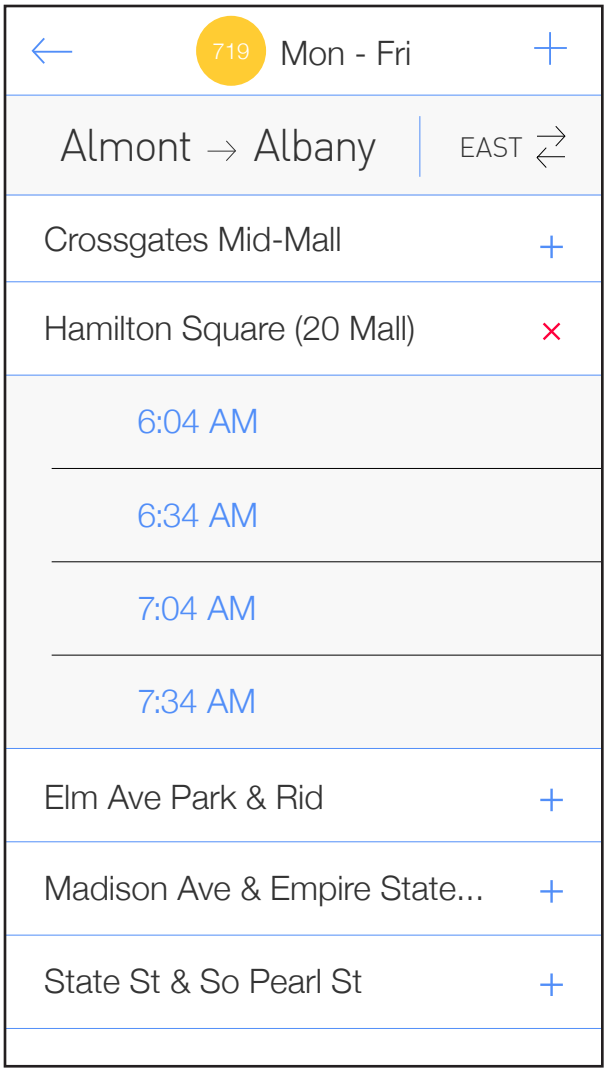
To provide users with the best experience of viewing schedules on a small device we knew we had to eschew traditional tables as they require too much imprecise pinching and swiping. At a given time users are generally only interested in a single specific stop-arrival time pairing.



Mon - Fri Schedule Cont.

Screen Eight

By collapsing the list of times at which a bus arrives at a stop under the name of the stop we streamlined the process of looking up arrival times, allowing the user to see all the arrivals for one stop at a time.



Desktop Home

The redesign of the CDTA website, when viewed on a larger, desktop-like device, centers around organization. First, we organized the information architecture based on how users think about the content for the site. It's important to understand the mental model that users have when navigating into a given section of content. If you can group pages and topics effectively, the user doesn't have to break his/her mental model of how content ought to be organized in order to navigate the site. We've grouped more subjects under about, as this is where a user would naturally expect them to be, as well as noticing a similar trend among large transit organizations.

Next, we organized and prioritized available actions based on users goals. Front and center, as with the mobile view, is quick-access to schedules. We felt that even though the desktop site will be viewed by a minority of users, it's essential to provide this popular functionality to all users. The search field to find your bus route is a clever combination of a typeahead and combobox, to allow for novice users to discover their route options, as well as experienced users to type theirs in. Smart defaults show the "next bus" view, since it's the most useful, but a user can select other times easily if they'd like. This unified and simple form control offers a one-step, non-intimidating way for users to get their bus schedules quickly.

Further organizing actions means adding quick links to things that will be useful to the users, so we've developed modules that stand out with helpful iconography to achieve this end. Just below the one-step schedules module is a clean slider, that can be used to highlight news items, promotions, and more. The long-form text increases engagement as users read the news stories and are encouraged to continue to do so with the corresponding action link.

Overall, the site is cleaned up and modernized. The thin typography and cool colors create a modern but corporate feel. The cleaned up social icons encourage users to connect with CDTA, an organization they may have never known was so active on twitter and other social media.

Desktop Home

CDTA

Schedules | Fares & Passes | How to Ride | About

Welcome to the Capital District Transportation Authority

What bus are you taking?

719 Altamont/Vorheesville | Altamont **to** Albany EAST ⇄ | Right Now | View

- Right Now
- Mon-Fri
- Saturday
- Sunday

3 Service advisories in effect currently affecting the Capital District.

Maria College & CDTA Launch "Unlimited Ride" Program

Maria College and the Capital District Transportation Authority (CDTA) today announced a transportation partnership that will provide Maria College students with unlimited rides on CDTA buses during the 2013-14 academic year… **Read More**

Buy Passes | Rider Guide | Plan Your Trip

Site Accessibility | Privacy Policy | Disclaimer | Site Map | Feedback

110 Watervliet Avenue, Albany, New York 12206 | Main: 518-437-8300 | Customer Service: 518-482-8822

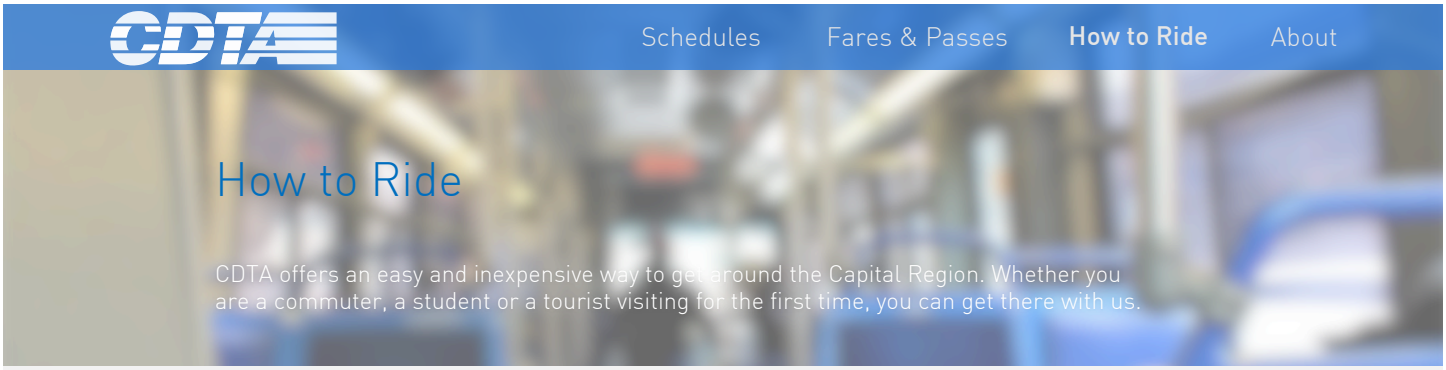
Desktop Interior Page

The redesign of an interior/content page of the site highlights our redesign of a large aspect of the CDTA website. We have completely overhauled the way users browse the site and discover content. This is important, because there is a wealth of good content and resources on the CDTA website, but as it is now, we don't feel the site and information architecture is optimized for user discovery of the content.

We've addressed this through the elimination of dropdowns and introduction of a sticky sidebar on interior pages. Dropdowns aren't good for discovery, because it requires a user to maintain the hover state while he/she focuses on a rollover and reads the different subpages. This is challenging because if a user navigates to a page that he/she doesn't want to be on, the user must remember which drop down menu they came from, and explore more. Additionally, this is a very poor design pattern in an increasing touchscreen-device oriented technological landscape. Tablets struggle to use dropdowns effectively because they can't really be activated on hover, and with the absence of a cursor flying all around the screen, you rely on luck to discover that a dropdown is not just a regular menu item. For all of these reasons, it is better to clearly articulate the top level elements of the information architecture to the user, and then break the subpages into component parts, which are navigable in their context.

We've achieved this end by introducing a "sticky sidebar" which contains all links for a given category of content. This is a good solution because it provides the user with an at-a-glance view of the information contained in the page, in addition to the fact that situating the sidebar next to the content it helps you navigate gives the user context as to the relationship between the sidebar navigation and the content. The text-bolding as well as the indication bars to the right of the active content section in the side-navigation reinforce the user's sense of space in the page. Large scrolling pages are preferable for the first time since we were originally told that users would rather click then scroll, because even notebooks have touchscreens now, or trackpads with built in scrolling, so the interaction to scroll pages is a lot nicer. Users are used to long scrolling from mobile, so they're more open to it on the desktop as well. Lastly, but importantly still, the typography of the page has been cleaned up to create a positive reading experience All of these things go to create a much more usable and pleasant experience navigating and reading content.

Desktop Interior Page



Riding with CDTA

- Bikable Bus
- Rider's Guide
- Travel Trainers
- Tips and Tools
- Lost and Found
- Security and Safety

Connecting the Region

Rail Stations

Albany International Airport

Bike-friendly Buses

You can bus-and bike with CDTA on all CDTA routes throughout the region. Sturdy, easy-to-use bike racks on the front of the Bikeable Buses offer all riders an environmentally sound, healthy and fun way to get around.

Learning how to use bike racks is safe and easy. Expert New York Bicycle Coalition member Claire Nolan shows you how in this short training video: Bikeable Bus How To

Find where you can park your bike on our bike racks map purchased and installed by local businesses and organizations through CDTA's Bike Rack Program.

Commuters

Bike to work easily with a little help from your favorite bus. You can now ride in part way and get a lift through town, or bus in and bike home. The Bikeable Bus is a great way to build a workout into your work day.

Cyclists

Get out to your favorite recreation areas with energy to burn. the Bikeable Bus can take you to new places that were previously out of range, and can make your rides safer and more relaxing.

Students

Get wherever you need to go, and have the freedom of your own wheels when you get there. The Bikeable bus is a great option to have if you're ever caught in bad weather to

Rider's Guide

CDTA offers an easy and inexpensive way to get around the Capital Region. Whether you are a commuter, a student or a tourist visiting for the first time, you can get there with us. Find out what you need to know about riding CDTA right here.

Bus Schedules are available on all route buses and at hundreds of locations through the