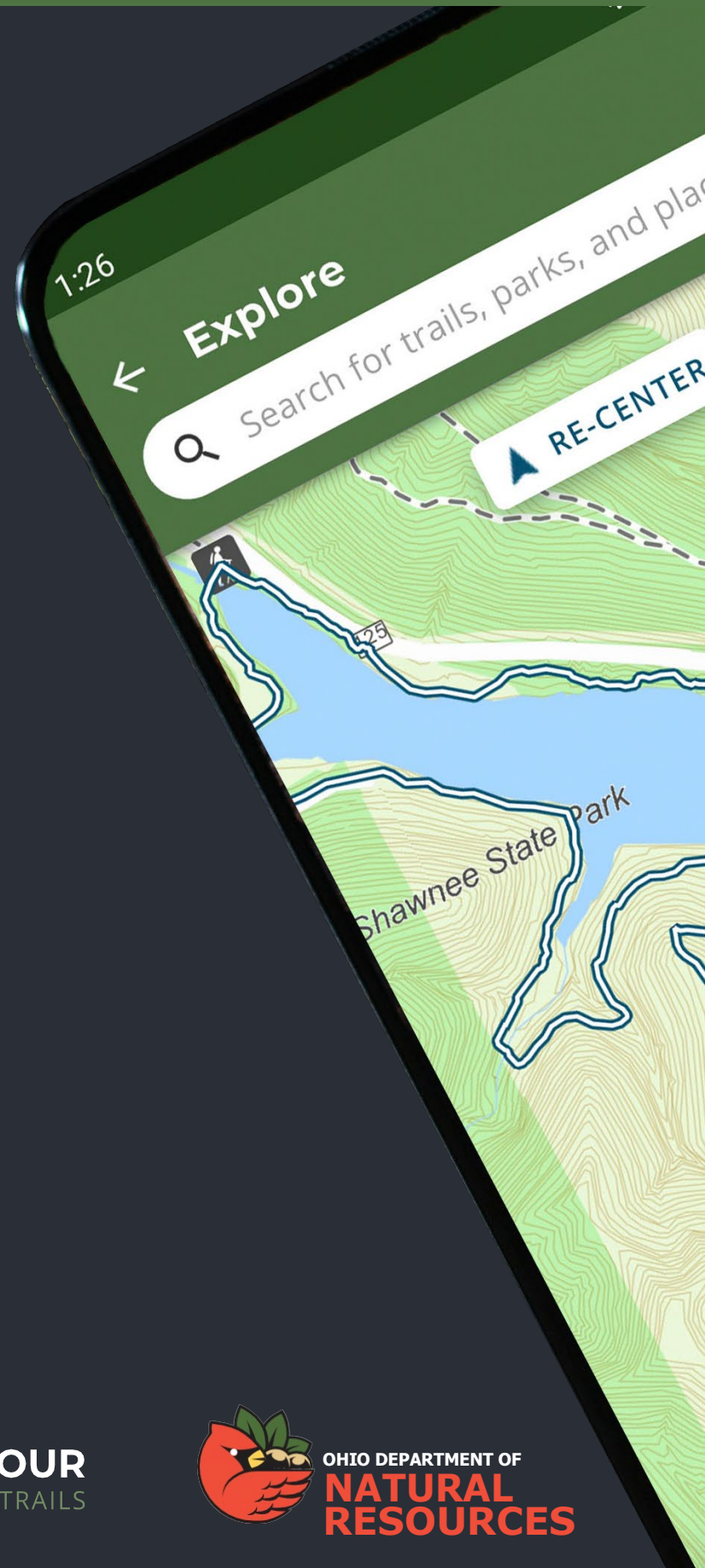


DETOUR TRAILS PROJECT:

Creating an interactive web and mobile experience to help users explore Ohio Trails.



CATEGORY:

Information Communications Technology
Innovations

STATE:

Ohio

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Project Initiation and End Dates:

May 2020 – April 2021



DETOUR
OHIO TRAILS



OHIO DEPARTMENT OF
**NATURAL
RESOURCES**

Executive Summary

Recreational trails are extremely popular in Ohio. Communities across the state are continuously planning and building trails to provide residents with more opportunities to live healthy, active lifestyles. The strength of the state's trail system is the diversity of experiences it offers, with systems available for bicyclists, walkers, runners, hikers, paddlers, equestrians, motorized users, and more.

The Ohio Department of Natural Resources (ODNR), the Ohio Trails Partnership (OTP)—a group of non-motorized trail advocates and managers—and the Ohio Legislative Trails Caucus worked together to create a plan that would further promote and advance public recreational trails across the state. The outcome of this effort was the **Ohio Trails Vision**, published in May of 2019.

Two years in the making, the vision plan involved trail advocates, planners, managers, and users from around Ohio. This ad hoc group became known as the Ohio Trails Advisory Team. Collecting input from five statewide public meetings and an online survey, the Trails Advisory Team proposed in the plan more than 40 goals that would help advance Ohio as a destination for enthusiasts of recreational trails.

Key among those goals was to harness ODNR's vast recreational trails inventory data and use it to create a world-class web and mobile application, one that featured authoritative information to help end users safely and reliably explore Ohio trails.

Today, the new DETOUR trails app is Ohio's go-to source for authoritative trail information for both beginner and expert-trail users.

The app offers featured routes, provides driving directions to trailheads, and includes information for trail managers.

Idea

The Ohio Department of Natural Resources (ODNR) set out to create a desktop and mobile application to make Ohio trail data accessible to users.

Encouraging users to escape the everyday, the new application was named **DETOUR**. **DETOUR** Ohio Trails was designed to feature an easy-to-use interactive web map and mobile device app to help end users explore public recreational trails in Ohio, and to assist trail planners and managers plan new trails and improve existing corridors.

The purpose of **DETOUR** is to make it easy for end users to find trails close to them and throughout the state, to get basic information about the trail, guidance along the trail, learn allowed use of the trail (e.g., hiking, biking, motorized vehicles), and the trail owner (e.g., a township, city, county, state or federal entity).

This involved two components:

1. The development of a comprehensive, statewide geographic database of trails and trailheads.
2. Displaying of the trail information on both mobile and desktop (/laptop) environments.

OBJECTIVES:

Successful completion of this initiative will result in a system of tools and processes that:

- Promote Ohio's natural resources and amenities by highlighting specific trails and routes across the state.
- Support local governments by providing a no-cost platform for them to feature and promote their trail systems.
- Integrates with and leverages all content within the DNR's Geographic Information System (GIS) such that appropriate business processes are executed with high levels of geospatial awareness and location-specific business intelligence.
- Allows ODNR to share accurate and relevant trail data on a timely basis with all trail users.
- Promotes the state's Trail Tourism, a multi-million-dollar industry in Ohio.

SCOPE:

- Provide end users with authoritative information about recreational trails in a spatial context so they can discover rewarding outdoor recreational experiences across the State of Ohio.
- Display trails on a map in both web and smartphone (Android and Apple iOS) platforms.
- Applications developed must function on both the Android and iOS platforms with the same functionality and performance.
- Support navigating and browsing around the map through commonly understood procedures (Zoom, pan, mobile gesture controls, search for location, etc.).
- Enable end users to perform spatial and non-spatial searches for trails.
- Support an off-line function where an end user can download a georeferenced map image of their area of interest and track their progress via a mobile device's global positioning system (GPS) on this image.
- Ability for end users to authenticate and create a profile before storing preferences for trails and trail history, using the IOP (OH|ID) authentication platform.

Additional features of application:

- Print a trail map
- Mark a starting point on a map
- Scrolling / repositioning a map
- Driving directions to trail head
- Anonymous use on the mobile application
- Setup a user profile utilizing OH|ID, a.k.a., IOP (i.e., InnovateOhio Platform)
- Capture trip history

Implementation

Ohio **DETOUR** mobile and web application implementation occurred over a six-month period through an agile methodology for development.

ODNR and the Environmental Systems Research Institute (Esri) engaged in discussions regarding the vision of Ohio **DETOUR**. This dialog resulted in the derivation of the specific iterations, to lead towards the implementation of the applications.

The following iterations occurred:

- (August/September 2020) Iteration 1 System Design and Foundational Mobile and Web App Development
 - Design Validation
 - Business and end user's validation
 - Developed design artifacts to include App Wireframes, User Personas
 - Front End Development
 - Enterprise GIS Health Check
 - Review and Assess ODNR production GIS infrastructure/implementation.
 - Mobile Application Development and Testing
 - Web Application Development and Testing
- (October 2020) Iteration 2 ArcGIS Hub and Enhanced Capability/Enhancements to Ohio **DETOUR** Apps
 - Deployment and Configuration of ArcGIS Hub
- (November 2020) Iteration 3 Enhanced Capability/ Enhancements to Ohio **DETOUR** Apps
 - Mobile Application Development and Testing
 - Web Application Development and Testing
- (December 2021) Iteration 4 Enhanced Capability/Enhancements to Ohio **DETOUR** Apps
- (January 2021) Iteration 5 Enhanced Capability/Enhancements to Ohio **DETOUR** Apps
- (February 2021) Iteration 6 Enhanced Capability/Enhancements to Ohio **DETOUR** Apps
- March 2021 – First public release of the Ohio **DETOUR** Apps.

The ODNR Project Team worked through the following types of agile activities through the implementation of **DETOUR**:

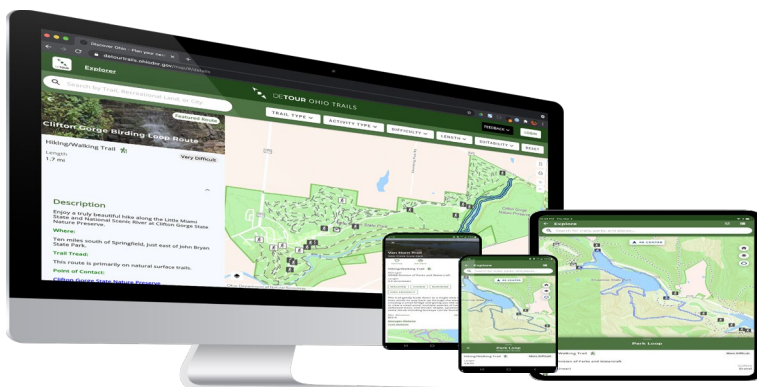
- **Product Backlog Grooming:** These meetings are to verify that each user story has the correct amount of detail so that it can be appropriately estimated and tasked.
- **Monthly Iteration Planning:** The planning session is where the team agrees on the items that will be worked on in that iteration.
- **Iteration Review and Retrospectives:** This event is conducted at the end of an iteration. It is a time to reflect on the past iteration and determine what went well and what could be better.

Microsoft DevOps was used to track the user stories for **DETOUR**.

The screenshot shows a user story card in Microsoft DevOps. The title is "9736 Mobile App: Explore Page - Nearby Tab - Feature Search on Trails". The status is "Closed" and the area is "Ohio Trails Explorer". The description states: "As a **mobile user**, I can see a search bar where I can type in keywords that narrow down my list of nearby trails cards. These keywords will pertain to: Trail name, Managed Area name." A note mentions that keyword searches can be discussed and explored for future iterations. A list of keywords includes City name, County name, Township name, Trail difficulty, Trail amenities (e.g., restrooms, parking lots, etc.), Trail activities (i.e., Hiking, biking, equestrian, APV, snowmobiling, cross country skiing), Wheelchair Friendly, and Dog Friendly. The card also includes sections for Planning (Story Points, Priority 2, Risk), Classification (Value area, Business), Deployment, Development, and Related Work.

Figure 1: example of a user story

WEB & MOBILE APPLICATIONS



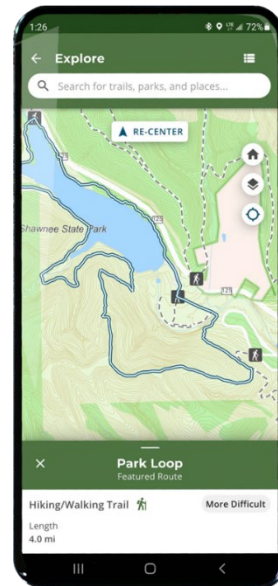
Impact

Through the development of **DETOUR**, both trail managers and trail users have access to a 100% free tool to plan, maintain and use a variety of trails from dozens of different agencies and organizations. The development of a standard, statewide trails app has facilitated a more consistent documentation for naming and mapping of trails statewide. This allows trail managers to collect and display information about their trails that the public wants and needs to access before they use the trails. Before **DETOUR**, almost every agency provided trail information differently and mapped them in different ways, but **DETOUR** provides a standard for all partners in Ohio to work together and display information consistently for all users.

In addition, **DETOUR** provides a platform for trail users to contact trail managers about problems they are seeing on the trails. Users can provide both a geographic location and photos of problems that are georeferenced so that trail managers can quickly find and address the issue. In the past, phone calls were made to offices to advise of downed trees or other hazardous situations on the trails but since many calls were made after hours or on weekends, those calls sometimes went unanswered until the next business day. Returning the phone call and trying to find the location often delayed response time. With **DETOUR** we have a geographic location and a photo, so the trail manager has an exact location, and the photo helps to know what they are getting into before hitting the trail to alleviate the problem. This is also beneficial to know the severity of the issue and how quickly it may need addressed.

Finally, trail users have found information about trails in Ohio difficult to obtain. Users may know a few trails around their own home, but **DETOUR** allows them to find new trails wherever they may travel in Ohio. Many first-time users are surprised to find how many trails are close to them that they never knew existed. The app also allows the user to know allowed uses for each trail.

In just one month, nearly 10,000 users downloaded **DETOUR**, and trail managers continue to submit new trail data to be included in **DETOUR**. Even as Ohioans and visitors to the Buckeye State use the **DETOUR** app to find and enjoy world-class trail experiences, work continues to add even more trail miles and improve **DETOUR**'s functionality.



DETOUR.ohiodnr.gov