

Use Case Model

Use Case 1: Sign-Up

Primary Actor: User

Stakeholders and Interest:

- User: Wants to be able to quickly sign-up to use the web application
- ODOT: Wants to provide real-time accurate data to satisfy the residents of Ohio.

Preconditions: User does not have a validated account.

Postconditions: User successfully creates a validated account that allows him\her to login to the system.

Summary: User navigates to the website, clicks on the Sign-Up link, enters his\her username and password, submits this information to the system, and the system enters and stores this username and password as a new user.

Basic Flow:

1. User navigates to website.
2. User clicks on the Sign-Up link.
3. User enters their email address and his\her password.
4. User submits this information to the system.
5. System checks that the username has the correct format and the user does not exist yet.
6. System checks that the password meets the minimum requirements.
7. The system stores this information and creates this user.
8. The system redirects to the Sign-In page to allow the User to sign in if they wish.

Alternative Flows:

- 5a. User email address already exists as an account
 1. System signals error, rejects the creation of the same user, and system provides a way to request his\her forgotten password.
- 5b. User email address does not meet the minimum requirements
 1. System signals error, rejects the creation of the user, and the system remains on the same page to allow the user to enter a new password.
- 6a. User password does not meet the minimum requirements.
 1. System signals error, rejects the creation of the user, and the system remains on the same page to allow the user to enter a new password.

Use Case 2: Update Data by System

Primary Actor: System

Stakeholders and Interest:

- System: Needs to have the most up to date data to most accurately display and notify users.
- User: Wants to be able to see the most up to date data.
- ODOT: Wants to provide real-time accurate data to satisfy the residents of Ohio.

Preconditions: System has the pre-defined update interval stored and also the webpage to pull the real-time data.

Postconditions: System successfully updates its database with the most relevant data.

Summary: The system grabs the latest xml data from the ODOT website at the stored interval, updates the database, and finally updates the information on the webpage so this data can be used.

Basic Flow:

1. At a stored interval, the system accesses the stored ODOT website.
2. The system parses the XML file and stores it to the database.
3. The system updates the information it is displaying based on this new data.

Alternative Flows:

- 1a. The ODOT website is down and not accessible.
 1. System signals error to log file and not to the user and the system does not insert new data into the database.
- 2b. XML file does not have data in predefined format
 1. System signals error to log file and not to the user and the system does not insert new data into the database.

Use Case 3: Update Data by User

Primary Actor: User

Stakeholders and Interest:

- System: Needs to have the most up to date data to most accurately display and notify users.
- User: Requests new information so the user can see the most up to date data.
- ODOT: Wants to provide real-time accurate data to satisfy the residents of Ohio.

Preconditions: User has a valid account. System has the webpage to pull the real-time data.

Postconditions: System successfully updates its database with the most relevant data upon user request.

Summary: The user requests new data, then the system grabs the latest xml data from the ODOT website, updates the database, and finally updates the information on the webpage so this data can be used.

Basic Flow:

1. The User submits a request for new data.
2. The system accesses the ODOT website (the URL is stored in the web app).
3. The system parses the XML file and stores it to the database.
4. The system updates the information it is displaying based on this new data.

Alternative Flows:

- 2a. The ODOT website is down and not accessible.
 1. System signals error to log file and to the user and the system does not insert new data into the database.
- 3b. XML file does not have data in predefined format
 1. System signals error to log file and to the user and the system does not insert new data into the database.

Use Case 4: Analyze Road Activity

Primary Actor: User

Stakeholders and Interest:

- System: Needs to have the most up to date data to most accurately display data.
- User: Wants to find where the most road activity takes place.

Preconditions: User has a valid account and has navigated to the correct webpage.

Postconditions: User is able to accurately display road activity based on filters that the user selects.

Summary: The user selects different filters to request data to be shown from a specific date/time window and for specific road activity (i.e. Accident, Snow\Ice, Planned, Disabled Vehicle, All, etc.)

Basic Flow:

1. The User selects a time frame for the data they want displayed.
2. The User selects the road activity they wish to display – options for this are Accident, Roadwork – Planned, Roadwork – Unplanned, Flooding, Snow/Ice, Debris, Disabled Vehicle, Other, or All.
3. The system displays the data based on the time frame and road activity selected.

Alternative Flows:

- 3a. The data requested by the user does not exist.
 2. System signals no data to the user.

Use Case 5: Enter roads travelled

Primary Actor: User

Stakeholders and Interest:

- System: Needs to track and store roads travelled that the user enters.
- User: Wants to enter the roads the user travels.

Preconditions: User has a valid account and has navigated to the correct webpage.

Postconditions: User successfully enters user specific road information to system.

Summary: The user selects roads and mile markers that the user travels on and the time and day the user travels on these roads, and successfully submits this data to the system.

Basic Flow:

1. The User enters the road, days the user will be travelling on this road, the start and stop mile marker, and the start and end time the user uses the road.
2. The User enters this information into the system.

Use Case 6: Edit Account Settings

The user will have the ability to log in and update his\her email address, phone number, name, and password. The email address and phone number are used to allow the system to notify the user of road activity.

Use Case 7: Remove Account

The user will have the ability to unsubscribe to the web application. By unsubscribing, the user is deleting their username, password, and all data associated with their account from the system.

Use Case 8: Notification System

The system will email\text the user to notify the user of recent road activity. The information the system sends is based on the user preferences.

Use Case 9: Current Road Activities

Primary Actor: User

Stakeholders and Interest:

- System: Needs to have the most up to date data to most accurately display the current road activities.
- User: Wants to easily see the current road activities.

Preconditions: User has a valid account and has navigated to the correct webpage.

Postconditions: User reviewed the road activities that are currently happening.

Summary: The user navigates to the correct webpage and changes the Start Date to the current date. This will correctly show the user the current road activities.

Basic Flow:

1. Select the current date for the Start Date
2. Leave the End Date blank
3. User views current road activity

Alternative Flows:

- 1a. User selects a Start Date that is not today.
 1. System displays all road activities that started on or after the date selected.
- 2a. User selects an End Date in the future
 1. System displays all road activity that started on or after the Start Date and that happened before or on the End Date. This might not show the user all current road activities if a current road activity is ending after the End Date selected.
- 2b. User Selects an End Date in the past
 1. System will not display any activities since it cannot find any activities between the Start Date of today and End Date of the past.

Use Case 10: Sign In

Primary Actor: User

Stakeholders and Interest:

- System: Needs to maintain user email address and passwords.
- User: Wants to log in to view road activity and the user specific information/roads to them

Preconditions: User has a valid account and is not logged into the system.

Postconditions: User is logged into the system.

Summary: The user navigates to the sign in page, types in their email address, types in their password, and then presses the Sign In button to be signed into the website.

Basic Flow:

1. Navigate to the Sign In page
2. Enter email address
3. Enter password
4. Click the Sign In button
5. The user is logged in

Alternative Flows:

- 1a. User types in the wrong email address
 1. When the Sign In button is pressed, system signals error and does not allow the user to log in.
- 1b. User does not enter email address in correct format (does not use the @ symbol)
 1. When the Sign In button is pressed, system signals error and does not allow the user to log in
- 3a. User types in the wrong password
 1. When the Sign In button is pressed, system signals error and does not allow the user to log in.

Use Case 11: Sign Out

Primary Actor: User

Stakeholders and Interest:

- System: Needs to log user out to ensure the user can no longer get to specific user-defined information and data.
- User: Wants to log out of system to ensure no one can get to their user specific information.

Preconditions: User is logged into the system.

Postconditions: User is logged out of the system.

Summary: The user clicks on the Sign-Out page and the system signs the user out and redirects the user to the home page.

Basic Flow:

1. Click the Sign Out link.
2. System logs user out of system.

Use Case 12: Subscribe to Alerts for Travel Path

This will allow the user to subscribe to travel paths. This use case will allow the user to select notification method (i.e. email or text), travel days/time, and how far in advance to travel time the system should monitor the travel path.

Use Case 13: Unsubscribe to Alerts for Travel Path

This will allow the user to unsubscribe to travel paths.

Use Case 14: View all Travel Paths

Primary Actor: User

Stakeholders and Interest:

- System: Needs to store user specific travel paths and display this information to the user;
- User: Wants to easily see the travel paths that the user added.

Preconditions: User has a valid account.

Postconditions: User reviewed the Travel Paths.

Summary: The user navigates to the correct webpage and views the travel paths that the user added.

Basic Flow:

1. Navigate to the Roads Travelled page
2. View the Roads Travelled that the user entered.

Use Case 15: Edit Travel Path

Primary Actor: User

Stakeholders and Interest:

- System: Needs to have user specific roads travelled information.
- User: Wants to edit a travel path that the use has already added.

Preconditions: User has a valid account and has navigated to the correct webpage.

Postconditions: User edits the road data.

Summary: The user navigates to the correct webpage and submits the data the user changed to the system.

Basic Flow:

1. Select the road data that the user wishes to edit.
2. Edit the data the user wants to change;
3. Submit the new information to the system.

Alternative Flows:

- 3a. User cancels out of the edit.
 1. System does not update any information that was updated.

Use Case 16: Remove Travel Path

This will allow the user to remove a travel path.

Use Case 17: View Account Settings

This will allow the user to view his\her Account Settings.