

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 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 sets up the roads he/she travels on and the time/day these roads are travelled

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

Basic Flow:

1. The User selects a road the user travels on and if a highway, the mile(s) on the road that is travelled.
2. The User enters the days this road is travelled and the approximate time this road is travelled.
3. The user submits this information to the system.

Alternative Flows:

- 3a. User selects a road or mile that does not exist in the system.

1. System signals error to the user and the system does not update the database.

Use Case 6: 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: User Preferences

The user will have the ability to turn on and off notifications and also how the user wishes to be notified (email or text message). The user can also specify how far in advance they want to know about road activity from when they will be travelling on that road. The user can also specify the information they want communicated to them, such as the time the road activity should be complete, a detour if one exists, the county the road activity is taking place in, the start mile of the road activity, the end mile of the road activity, the description of the road activity, a description of the start mile, and a description of the end mile.

Use Case 8: Unsubscribe

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 9: 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 10: Current Road Activities

The system will display all on-going road actives in a user specified area.

Use Case 11: Sign In

This will allow a user to sign into his\her account.

Use Case 12: Sign Out

This will allow the user to sign out of his\her account.