MARINE MAMMAL STRANDING RESPONSE & DATA TRACKING - REQUIREMENTS

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REQUIREMENTS DEFINITION

FUNCTIONAL REQUIREMENTS

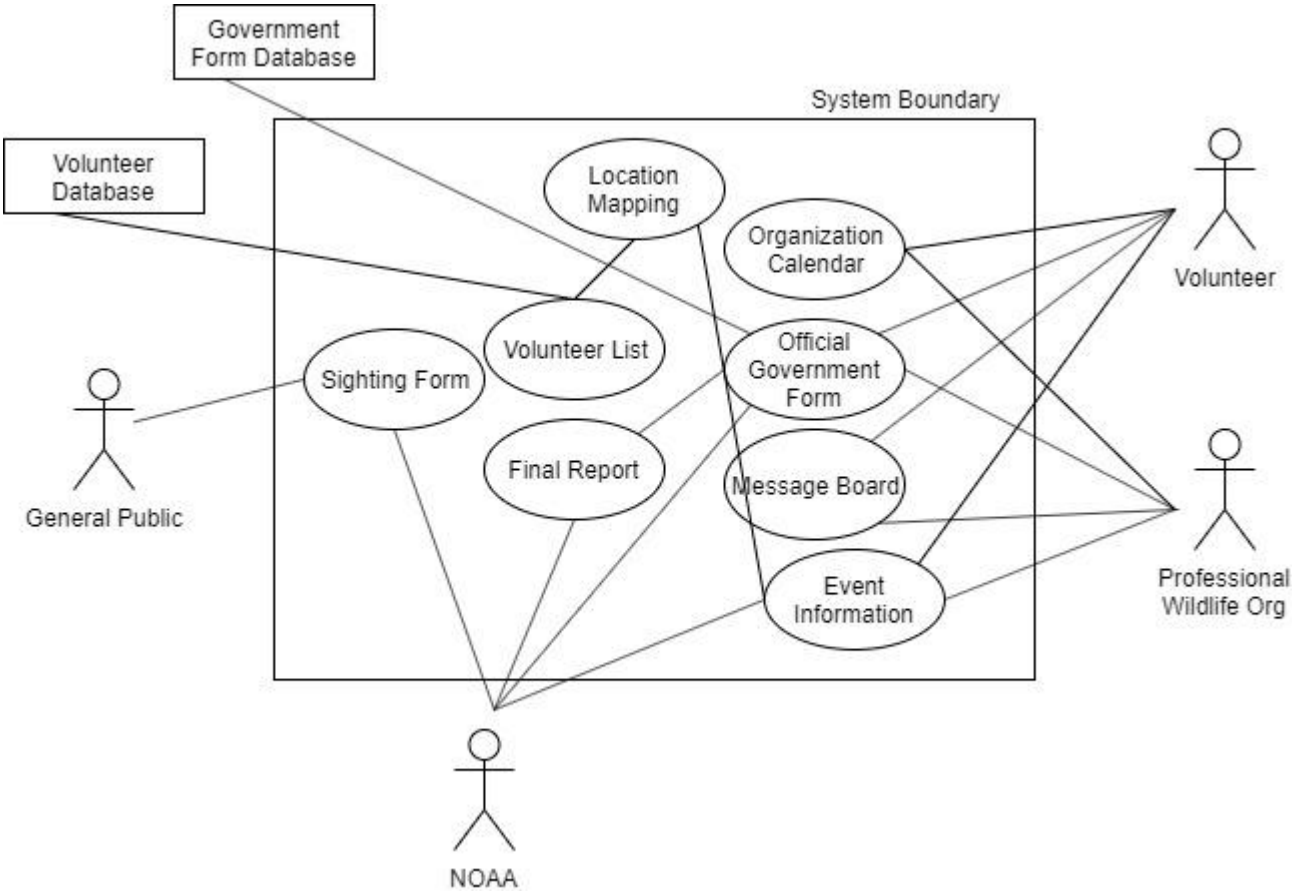
- The system shall tag each stranding incident reported by the public with the GPS location, date, and time
- The system shall create a new coordination site instance for validated instances of stranded animal reportings
- The system shall send notifications to NOAA for each incident reported by public
- The system shall deploy a text to all volunteers in the corresponding area for a validated instance of stranded animal report
- Volunteers within each event should be able to utilize a message board/messaging system to contact each other
- The system shall send notifications for event updates to the volunteers
- Volunteers can end events by pressing a button
- The system shall deploy a text to all volunteers when the stranding event is completed
- The system shall keep up to date versions of government forms

NON-FUNCTIONAL REQUIREMENTS

- The system shall update with a public entered stranded animal report within 20 seconds of the report
- The system shall deploy texts to volunteers in the area within 5 minutes of a validated instance of a stranded animal reporting
- The system shall create a coordination site within 5 minutes of a validated instance of stranded animal reporting
- The system shall update formal government form completed by volunteer responders within 20 seconds of the report
- The system shall update a completed event within 30 seconds of user (volunteer) interaction
- The system shall send final text to all volunteers who responded to a stranded animal report within 10 minutes of the end of the event

USE CASES

USE CASES DIAGRAM



USE CASE 1

- General public reports stranding

Actors

- General public/User
- Mammal

Preconditions

- User is at the location of the stranded mammal.

- The user reports the incident by filling out an incident report indicating the type of mammal that is stranded.
- The report is submitted to NOAA and the user's location is also reported via GPS.
- The stranded marine mammal is reported, and the information is sent to the system.

Postconditions

- NOAA is notified about the incident from the user.
- The user waits, if able, to keep an eye on the animal's whereabouts.
- Once the responders arrive the user can point out the direction of the mammal to the volunteer responders for an accurate location.
- The user cannot continue to help further because of safety issues.
- The volunteer responders continue on to attend the mammal.
- If the mammal is alive, the responders can help it get back into the ocean and document their report.

Flow of Events

- The user sees that there is a stranded mammal, whether it's directly on the beach or near coastal rocks, as well as if it is either dead or alive, and starts the incident report via mobile app.
- User writes the incident report that is provided by the app and identifies the type of mammal they think is stranded and describes the location or scene of the mammal.
- A picture is taken of the animal, if applicable, and is added to the incident report.
- The incident report also notifies the user that their GPS location will be sent to NOAA, where appropriate measures can be taken to dispatch volunteers to the correct location.
- Incident is filed and sent to the system where NOAA will be able to retrieve this report as well as the user's location that is pinned on the map.
- The system records the incident and notifies NOAA to contact local stranding groups dedicated to help stranded mammals and to deploy certified responders.
- The user can wait around the area at a safe location, distant from the mammal, until the volunteers arrive to help.

USE CASE 2

- NOAA Response to Stranded Marine Mammal

Actors

- NOAA employee

Preconditions

- Stranded Marine Mammal event has been reported by someone in the general public.
- The event contains details such as GPS location, animal condition, and photographs.
- NOAA employees are trained on how to escalate the event based on given event information
- NOAA sends out an alert via an application, email and/or text to qualified trained volunteer responders within the area.
- NOAA prepares the correct form based on event details for the volunteer responder to fill out.
- A scheduling system is sent out to all responders to register for a time slot.
- NOAA posts sends out continues updates and alerts until event has ended.

Postconditions

- After the mammal has been observed and the event has closed all volunteer responders are notified of its' ending.
- The event has been documented by volunteer responders using the correct forms that NOAA has indicated.
- NOAA initiates an application or webpage with event details and calendar.
- The data that the volunteer responders provide via the forms is put into NOAA's database.
- The data is analyzed to find patterns that cause marine mammals to become stranded.

Flow of Events

- NOAA receives a notification of a stranded marine mammal and an event is created.
- The event contains GPS location, photographs, and details of the mammal.
- NOAA employee escalates the event to the according level based on given event information.
- NOAA sends out an alert via an application, email and/or text to qualified trained volunteer responders in the area.
- NOAA prepares a schedule for volunteers to sign up for time slots via the application.
- NOAA indicates the correct form for the volunteers to fill out during their time slot.
- The most up to date form is pulled from the database and included in the stranding site for volunteers to fill out.
- NOAA sends out any updates and alerts via the application until the event has ended.
- The data the volunteers collected is put into a database and NOAA is responsible for analyzing it in order to help prevent future strandings.

USE CASE 3

- Volunteer Response to Stranded Marine Mammal

Actors

- Volunteer Responder

Preconditions

- Stranded marine mammal has been identified and recorded in the system by someone in the general public utilizing GPS information for location
- NOAA has deemed the notification from the general public real and has kicked off the response on the system
- The volunteer responder is registered in the database as a responder in the area that the stranded marine mammal has been identified in
- The volunteer responder is trained in how to respond to a stranded marine mammal
- User is trained to use the application to designate times they will respond to the marine mammal

Postconditions

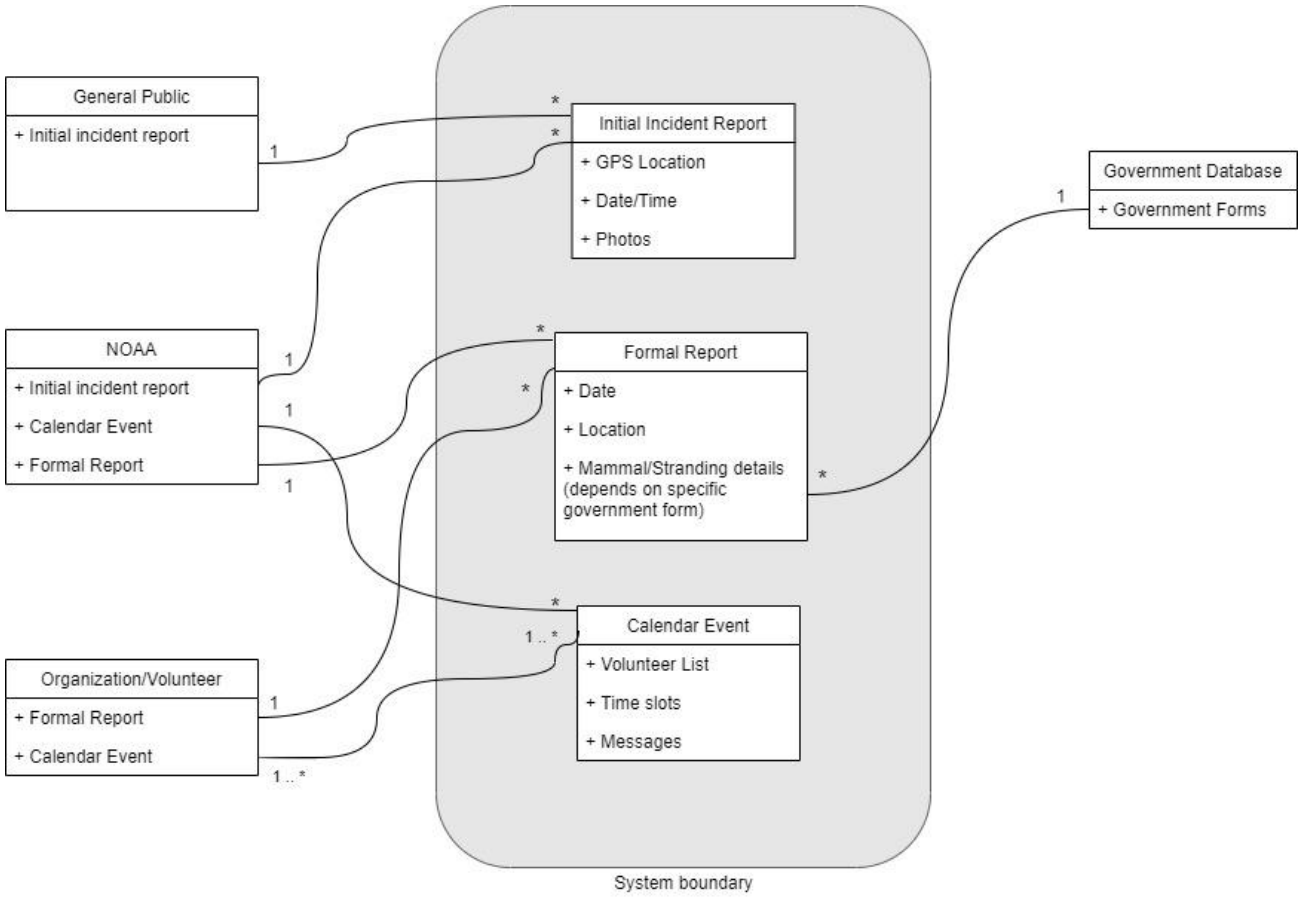
- Mammal has been observed until it has returned to the marine habitat
- Mammal has had minimal interaction with humans during the stranding event
- Mammal was watched from the point of the first responder showing up to protect it, to the time it returned to its habitat
- All volunteer responders in the area of the stranded marine mammal have access to the information that the mammal has returned to its marine habitat
- All professionals and organizations have access to the information that the mammal has returned to its marine habitat
- The event of the stranding has been documented with time of stranding reported, time of return reported, location, and any additional information required by the correct governmental forms

Flow of Events

- Volunteer is notified of the stranded marine mammal in their area via a text
- Location of animal and time of sighting are included in text to the volunteer
- Volunteer is sent a link via text to the stranding event site
- Stranding event site includes a calendar of the event where volunteers can sign up to assist with the stranded marine mammal, a bank of question and input fields to fulfill the information required by the most up-to-date government form that applies for this scenario and a message board where notes are added on the stranding event (if the animal moves locations, additional animals, humans attempting to approach animal)
- Volunteer signs up for a slot to monitor the marine mammal

- Volunteer shows up for designated time slot to monitor the animal, volunteer adds any information required by the government in the question/answer input fields on the stranding event site and adds any notes to the message board based on their experience at the stranding site
- Volunteer repeats signing up for a slot to monitor and showing up at the designated time for as many times as they are able
- Animal returns to marine habitat during monitoring period, volunteer ends the event on the stranding event site with the time that the animal returned and the status of the area
- All volunteers who have been added to the site receive a text notifying them that the stranding event has ended and thanking them for their contribution to the event
- All information about the stranding event is saved to the database of stranding events and professionals and organizations have access to this information
- The event is historized in the volunteer's profile as an event they have responded to

UML CLASS DIAGRAM



REQUIREMENTS SPECIFICATION

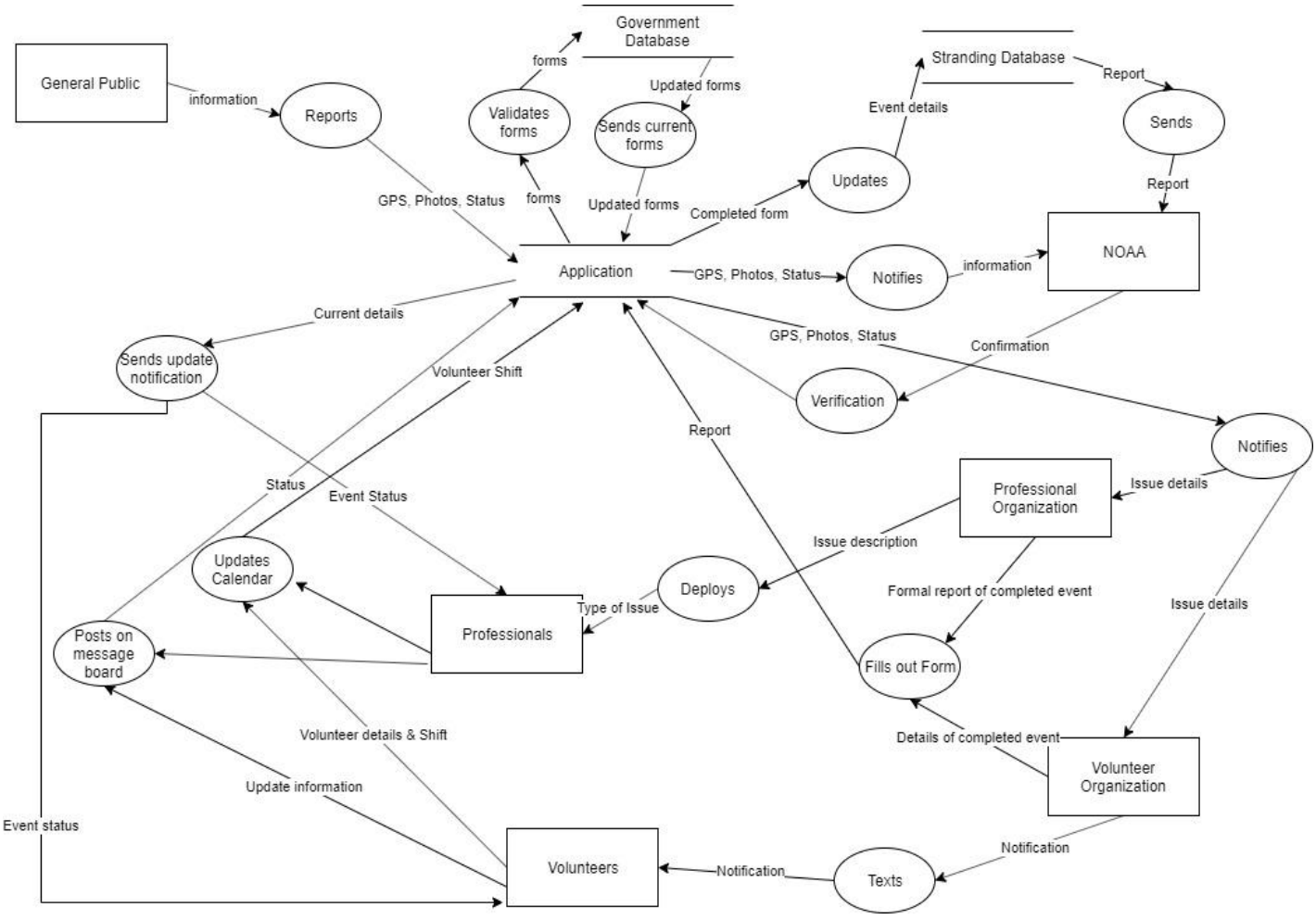
FUNCTIONAL REQUIREMENTS

- The system shall store all filled out government forms from an instance of a stranded animal in the stranding database
- The system shall provide screens for NOAA to browse through all stranding-related government forms to select the correct one
- The system shall provide screens for NOAA to create a calendar/scheduling event per stranding incident for volunteers
- The system shall provide screens for NOAA to create an volunteer alert/notification for a verified stranding incident
- The system will track which time slots each volunteer has signed up for
- Data collected at the end of an event will be stored in the database
- The system shall retain all instances of stranded animal reportings
- The system shall attempt to resend any reports (public reported and volunteer reported forms) if initially completed offline
- The system will provide screens for volunteers to update event details and end stranding events

NON-FUNCTIONAL REQUIREMENTS

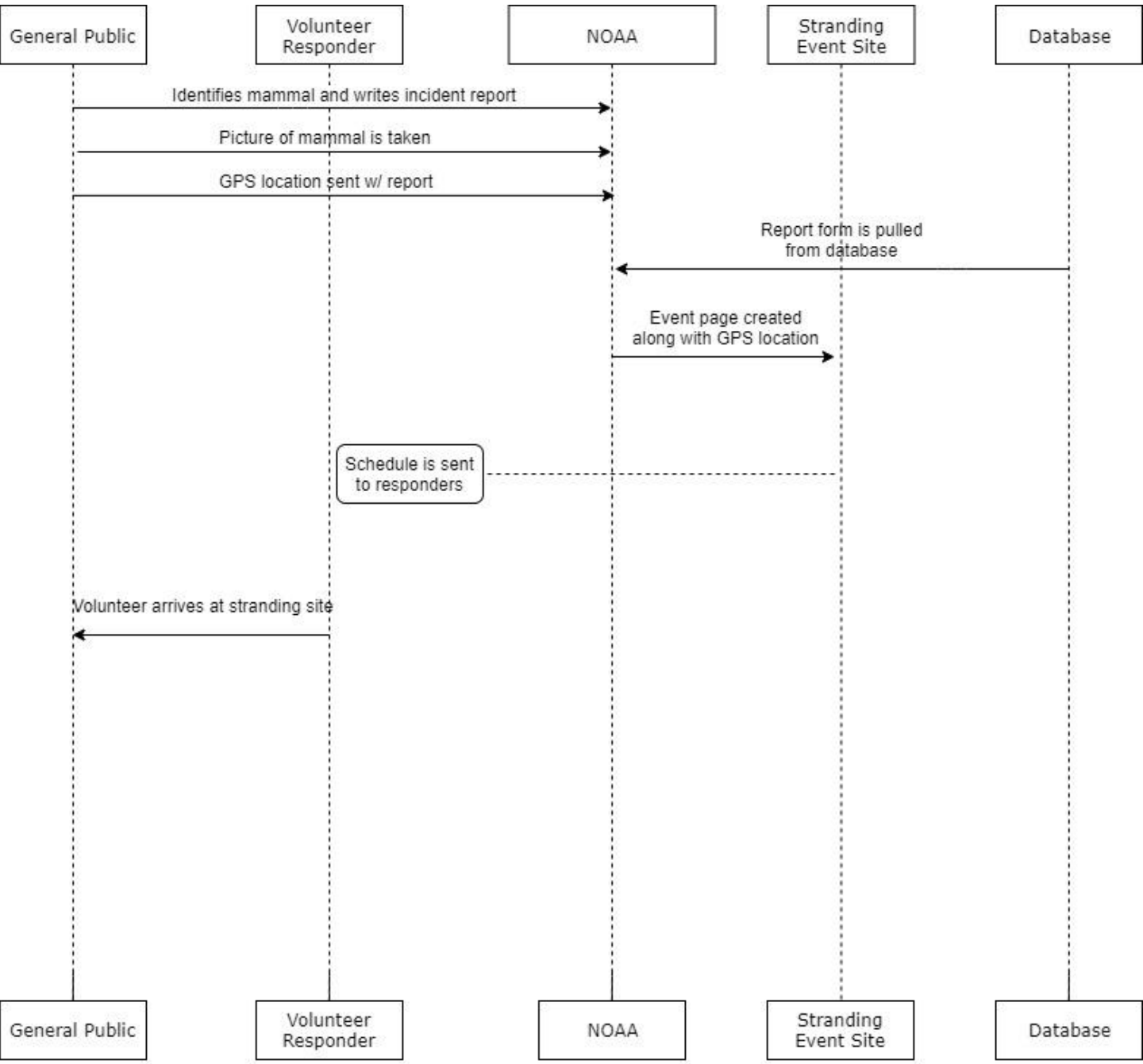
- The system will update volunteer slots at least every 10 seconds in an active event
- The system will close out an event when it receives a command from a volunteer on the current event's volunteer list
- The system will send new information to stranding event site within 5 minutes of the volunteer's update
- The system shall attempt to resend reports completed offline at least every 10 minutes

DATAFLOW DIAGRAM

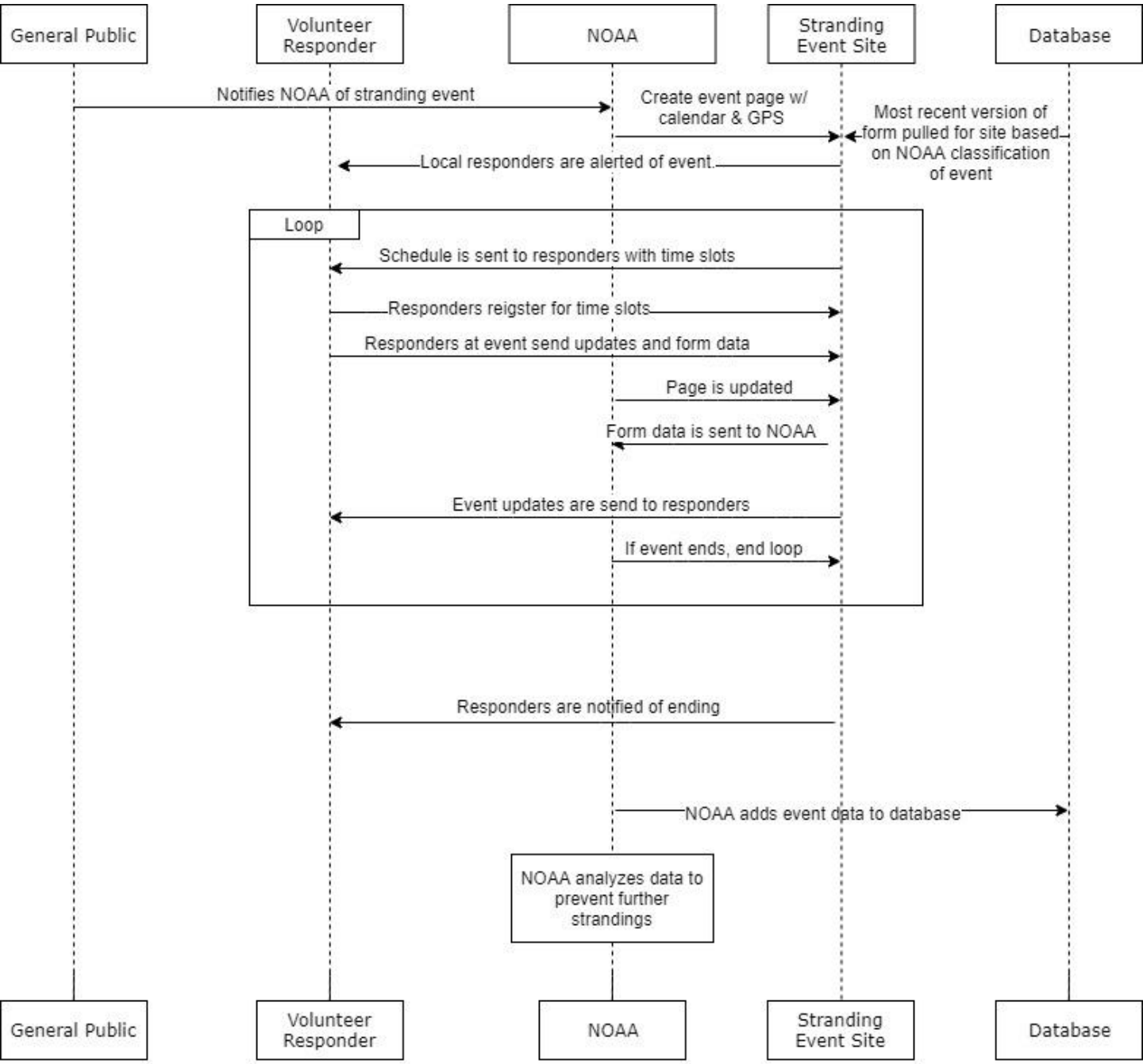


MESSAGE SEQUENCE CHARTS

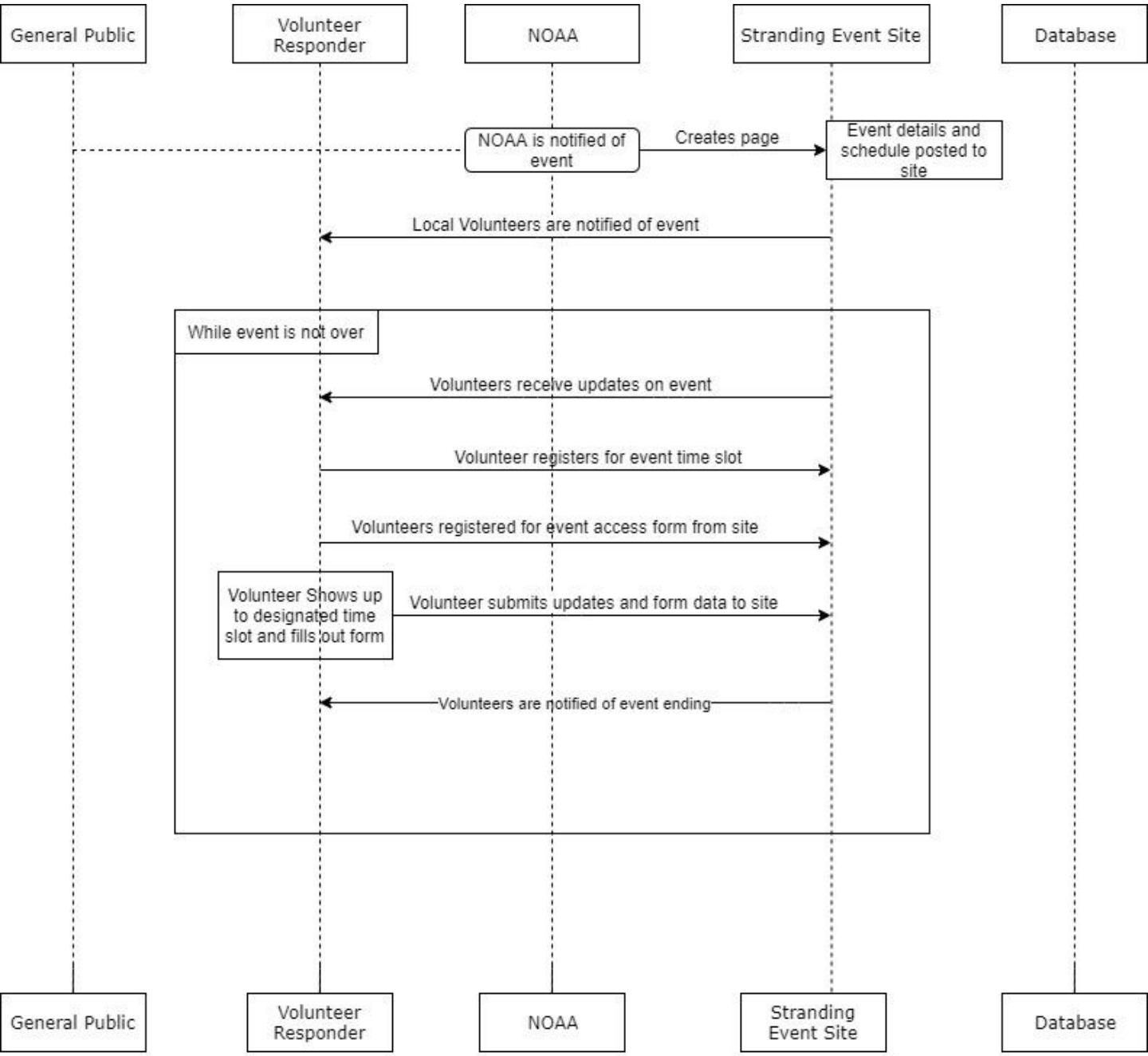
USE CASE 1



USE CASE 2


General Public
Volunteer Responder
NOAA
Stranding Event Site
Database
Notifies NOAA of stranding event
Create event page w/ calendar & GPS
Most recent version of form pulled for site based on NOAA classification of event
Local responders are alerted of event.
Loop
Schedule is sent to responders with time slots
Responders reigster for time slots
Responders at event send updates and form data
Page is updated
Form data is sent to NOAA
Event updates are send to responders
If event ends, end loop
Responders are notified of ending
NOAA adds event data to database
NOAA analyzes data to prevent further strandings
General Public
Volunteer Responder
NOAA
Stranding Event Site
Database

USE CASE 3


General Public
Volunteer Responder
NOAA
Stranding Event Site
Database
NOAA is notified of event
Creates page
Event details and schedule posted to site
Local Volunteers are notified of event
While event is not over
Volunteers receive updates on event
Volunteer registers for event time slot
Volunteers registered for event access form from site
Volunteer Shows up to designated time slot and fills out form
Volunteer submits updates and form data to site
Volunteers are notified of event ending
General Public
Volunteer Responder
NOAA
Stranding Event Site
Database

SUMMARY

CUSTOMER MEETING SUMMARY

Our customer, Justin Tromp, was willing and able to meet with all 5 of our group members on Wednesday, on Google Hangouts, where our group was able to get a better understanding of Justin's vision for the project.

TEAM MEMBER CONTRIBUTIONS

- All – Established communication early on in Week 2 via Canvas and continued throughout Week 3 on Slack. Attended first official group meeting on Google Hangouts on Wednesday, 10/16/19.
- Brittany Abad – Set up shared Google Drive, UML Class Diagram, Requirements Definition/Specification, Assembled and edited final document
- Lauren Boone – Use Case 2, Use Case 2 Message Sequence Chart
- Christopher Feth – Dataflow Diagram
- Manda Phadke – Initiated assignment delegation, Use Case 3, Use Case 3 Message Sequence Chart, Requirements Definition/Specification
- Kunal Patadia – Use Case 1, Use Case 1 Message Sequence Chart