

DESIGN BRIEF

D I S A S T E R Z O N E

ARAPAOA MOFFAT (2015)

PAGE #1

SITE PROFILE

BRIEF

Disaster Zone is a website single page responsive website that brings information, about disasters currently happening in the world to one central easy to access website. Disaster Zone acts as a warning and information site to help people, in the event of disasters and direct users to donate to relief funds via external links, not run by Disaster Zone as well as Disaster Zones internal relief fund. Disaster Zone also helps organize volunteers in the aftermath of a natural disaster. Disaster Zone is made to run on all current mobile devices and computers, with responsive scaling design built in as a core feature.

Disaster Zone is made for all people of every age; it needs to be simple to understand and navigate the concept is that. Even someone with limited technical skills can operate the website; find the information they need quickly and easily when they need it. To make sure that Disaster Zone is easy to operate and understand, I have designed it as a single page interface no hidden buttons or functions. Every important piece of information is on the same page, with the most important being viewable at all times example the map and news from around the world are always visible along with the markers on the map defining the current disasters taking place in the world.

FUNCTIONS

- Information on disasters and warning system for people
- Localized on map depending on geographic location
- Sends warnings after sign-up and inputting area if a natural disaster in your area e.g bush fire via sms email or app push notifications
- Ability to donate to charity's to help out in larger environmental disasters
- Uses google maps official points added to map, all colour coded depending on severity or type of natural disaster.
- Ability to volunteer and coordinate help for people in trouble
- News side menu shows most recent events, local first and then worldwide if no dangers are present in your country of origin.
- Prepare link with helpful tips on things needed to help in a disaster zone
- Users can add warning to maps of dangers, ability to toggle on user's waypoints and just show official ones.
- Single webpage for 90% of the information more detail can be found by hovering over the waypoints for more info on this particular disaster.

TECHNICAL REQUIREMENTS

- Must provide real-time up-to date information
- Reliable website infrastructure
- Fast loading website for countries that don't have fast internet connections.
- Must have information to help prepare people for disasters
- Warn users of disasters in their area.

WEBSITE CODE

- HTML + CSS for barebones of website
- jQuery used for click functions on map, hiding and showing of divs highlighting of news articles.
- Framework bootstrap, used for help in responsive design
- Smooth scroll jQuery plugin, allows for smoother scrolling
- Tiny scroll jQuery plugin, custom scroll bars

WIREFRAMES

INDEX

ALERTS

[logo]Disaster Zone

Alerts SMS EMAIL RADIO

News Prepare Communications Help Out

//news feed
Article 1

Article 2

Article 3

Map Key

//google maps API

//footer

[logo]Disaster Zone

Alerts SMS EMAIL RADIO

Sign-up for alerts from Disaster Zone get notified of Disasters in your area sent to your email.

EMAIL:

COUNTRY:

CITY:

POST CODE:

By ticking this box you agree to our terms of service and to receive automated alerts to your email address above. Disaster Zone will only send alerts that you choose to receive in the event of a disaster.

NO YES

//news feed
Article 1

Article 2

Article 3

Map Key

//google maps API

//footer

KEY

GREEN ELEMENTS = INTERACTION

DISASTER ZONE

WIREFRAMES

PREP

[logo]Disaster Zone

Alerts SMS EMAIL RADIO

News Prepare Communications Help Out

//news feed
Article 1

Article 2

Article 3

Disaster Kit
In the event of a disaster having a disaster kit will greatly help you manage to support yourself and family. Below are some recommended items for your own personal disaster kit. Your kit should have the supplies needed for up to three days.

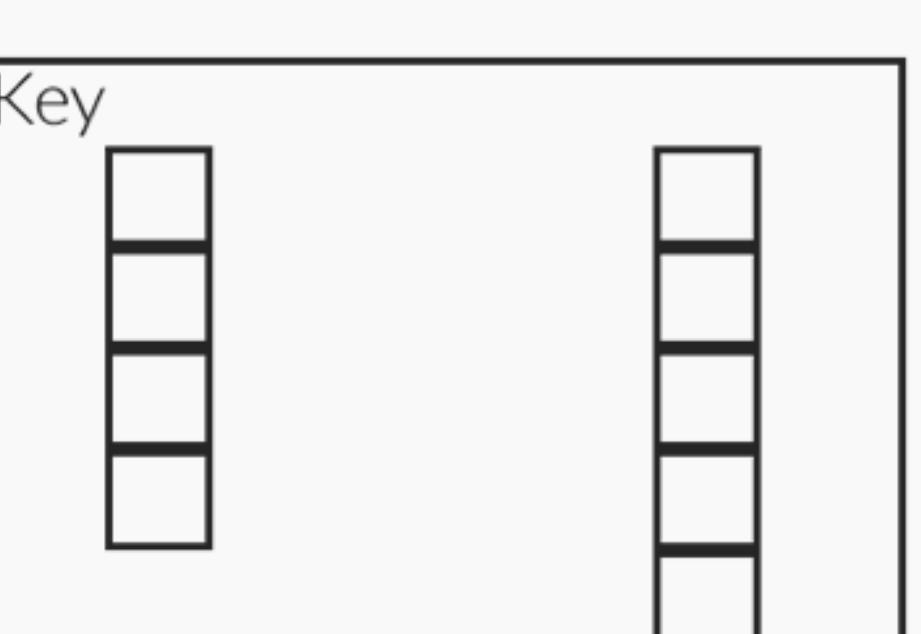
Survival Items

- Battery powered torch, with spare batteries or self-charging
- Portable radio
- First aid kit and any prescription meds
- Blankets and sleeping bags
- Pet supplies
- Toilet paper and rubbish bags
- Lighter or matches
- Cooking gas

Food And Water

- Canned food
- Dried food
- Water three litres per person per day
- Water for washing and cooking
- Portable cooker gas powered
- Can opener

Map Key



//footer

KEY

GREEN ELEMENTS = INTERACTION

API

[logo]Disaster Zone

Alerts SMS EMAIL RADIO

News Prepare Communications Help Out

//news feed
Article 1

Article 2

Article 3

//google maps API

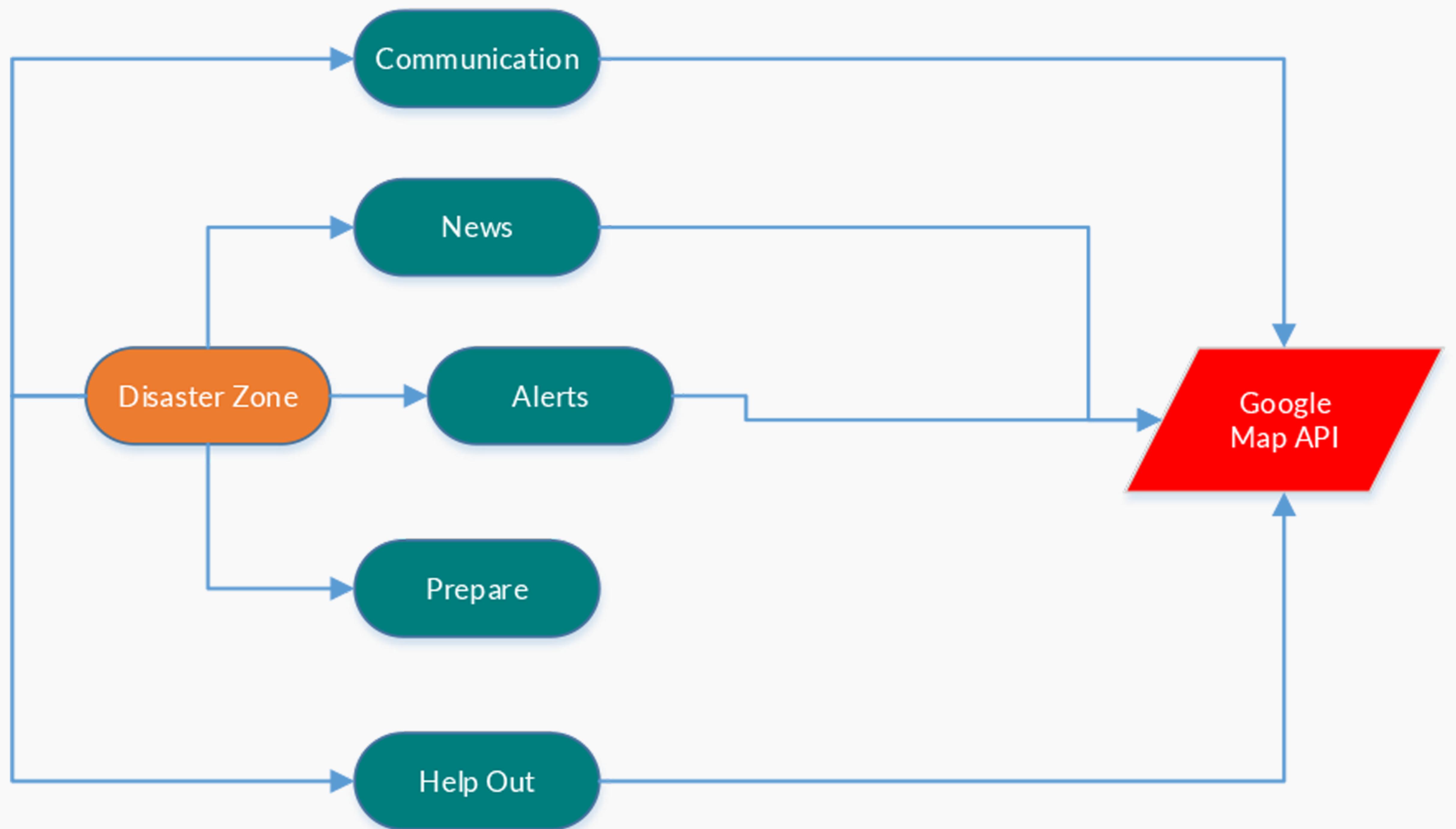
Map Key



//footer

DISASTER ZONE

FLOWCHART



KEY

DECISION LV1 [MAIN]	
DECISION LV2 [SECONDARY]	
PROCESSES LV1 [MAIN]	
SUB-PROCESSES LV2 [SECONDARY]	
DATABASE LV1 [MAIN]	
DATABASE DATA LV2 [SECONDARY]	
DATABASE API LV3 [TERTIARY]	
GOOGLE MAPS API [MAIN]	
STARTING POINT [MAIN]	
ENDING POINT [SECONDARY]	
TO OTHER TAB [MAIN]	

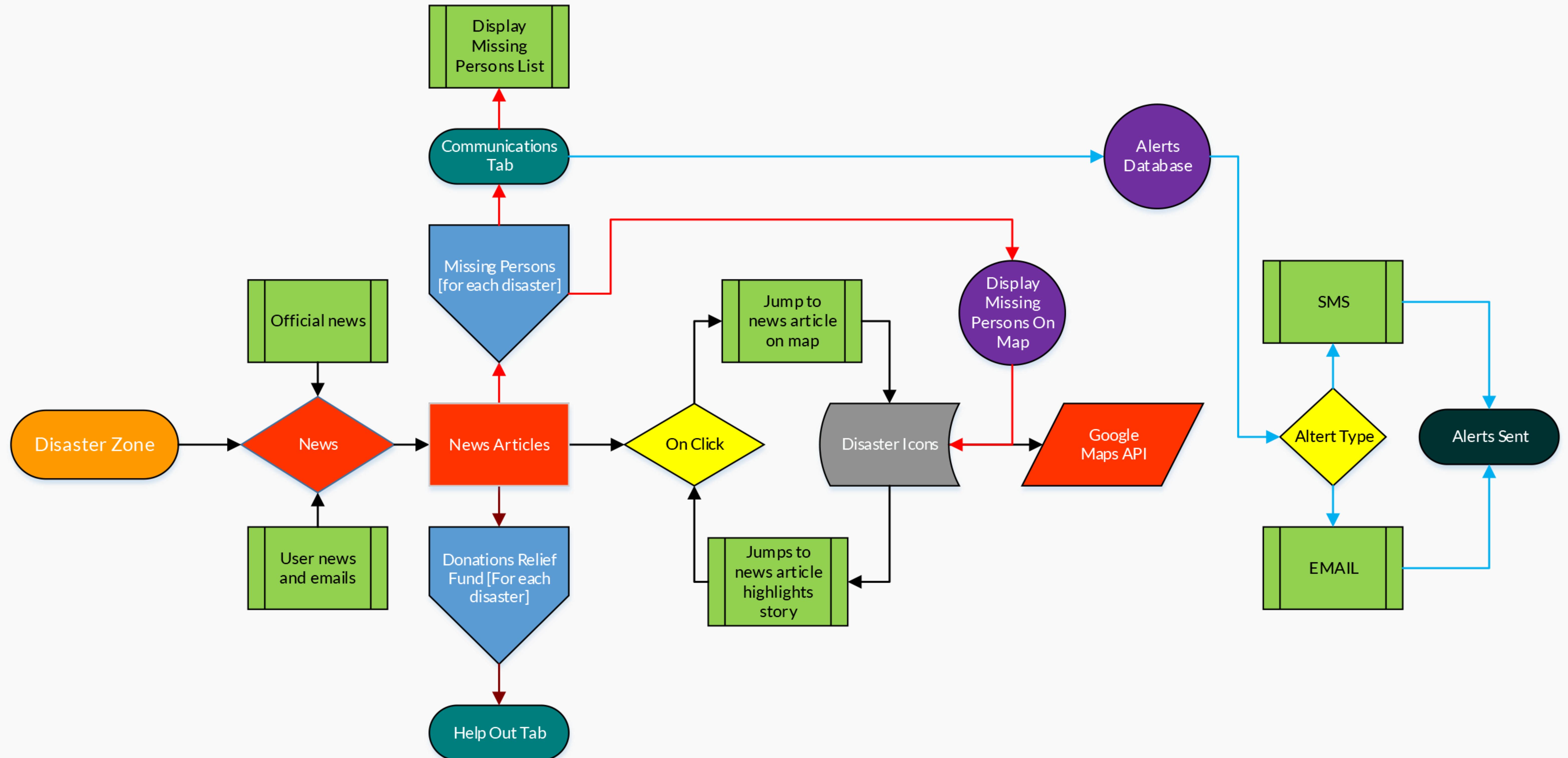
KEY

GREEN ELEMENTS = INTERACTION

DISASTER ZONE

FLOWCHART

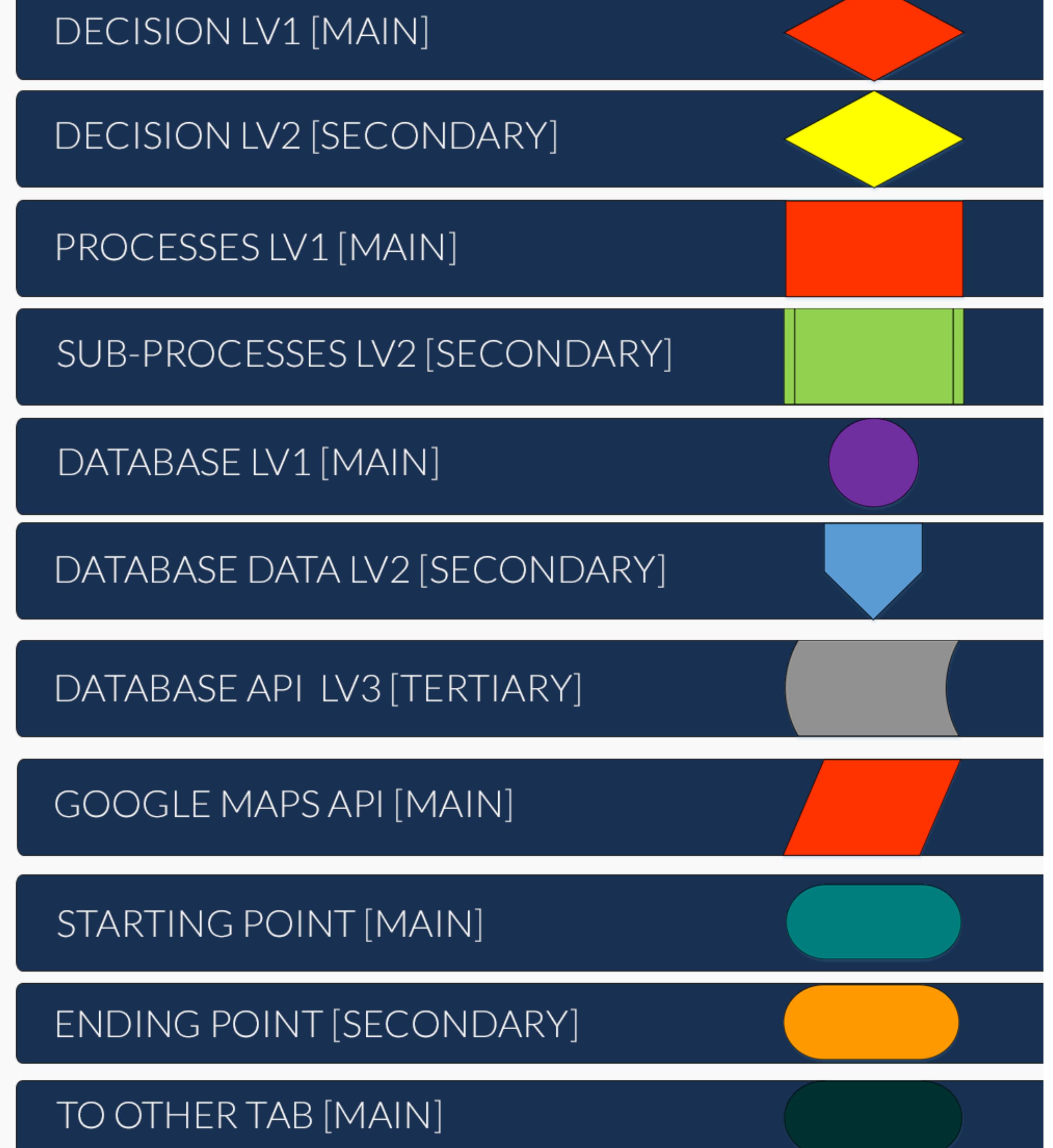
NEWS



KEY

GREEN ELEMENTS = INTERACTION

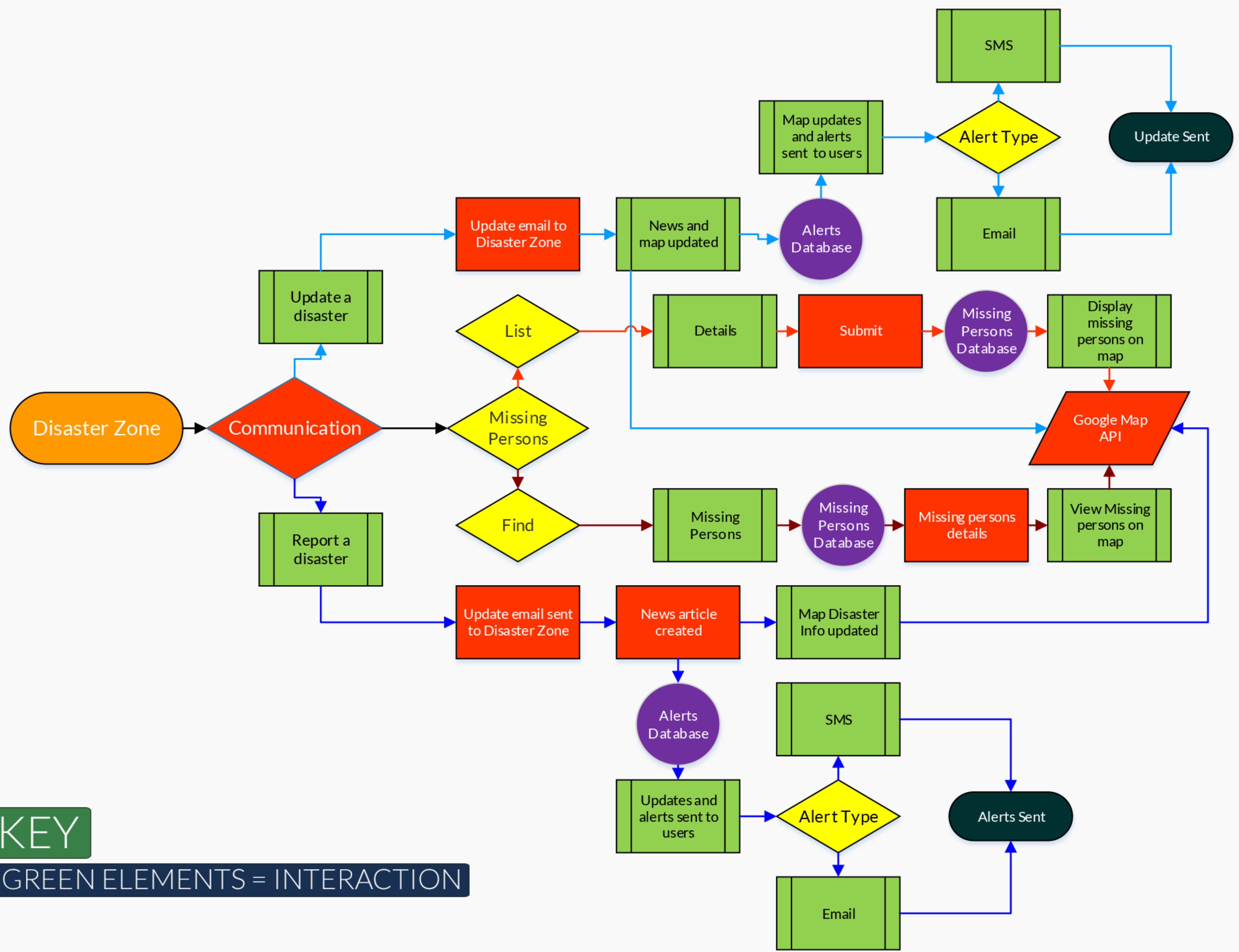
KEY



DISASTER ZONE

FLOWCHART

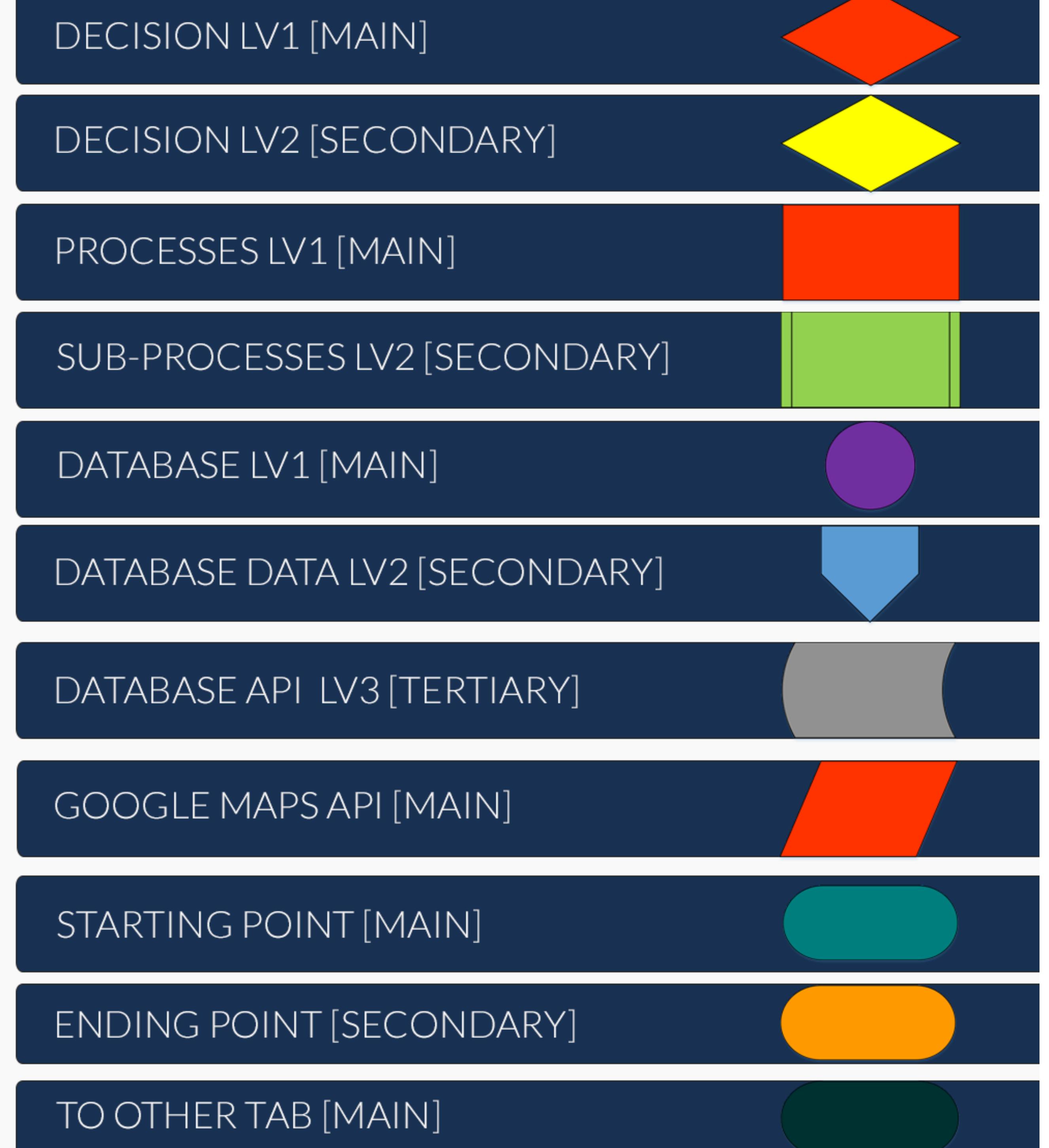
COMS



KEY

KEY

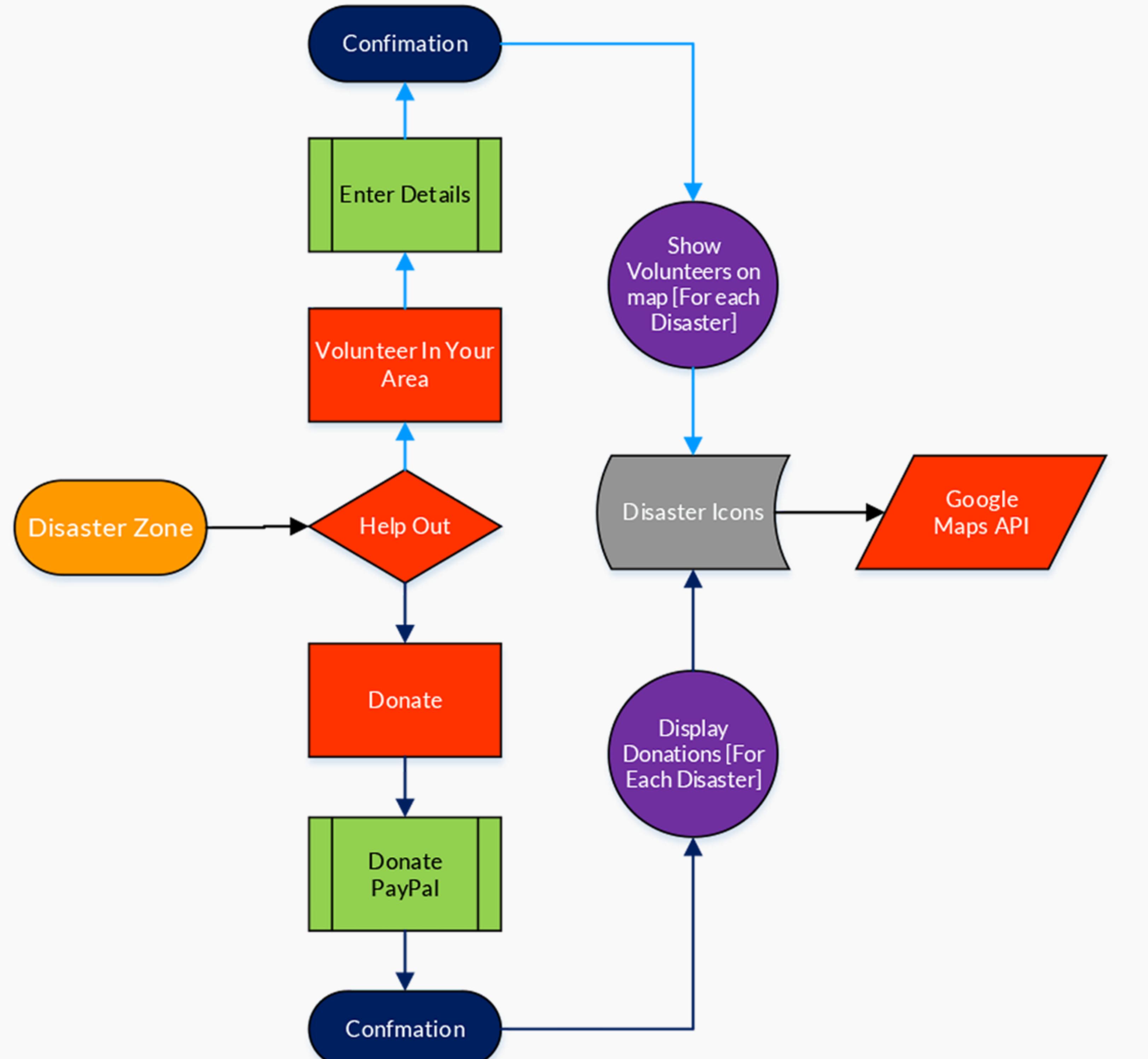
GREEN ELEMENTS = INTERACTION



DISASTER ZONE

FLOWCHART

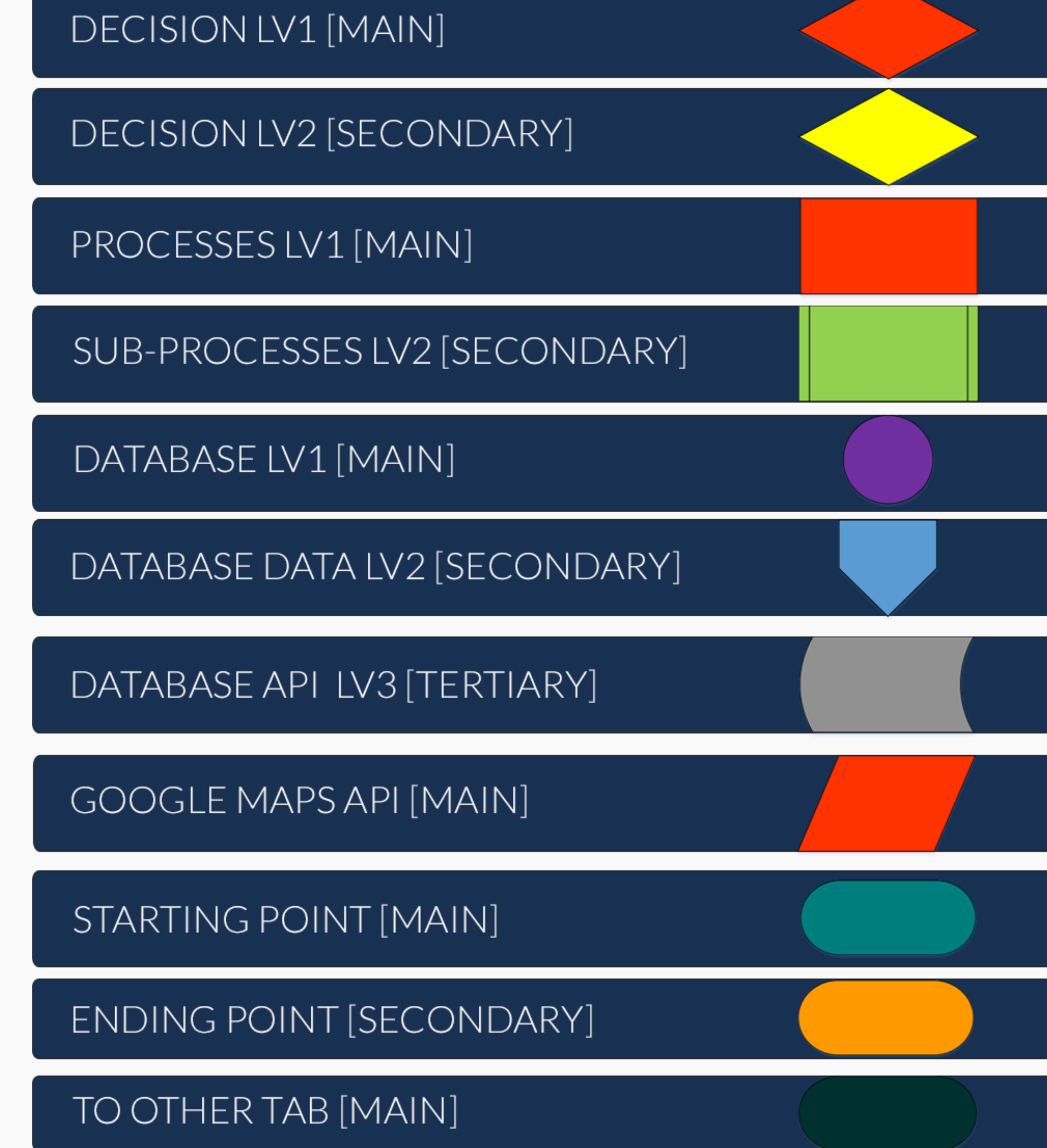
HELP



KEY

GREEN ELEMENTS = INTERACTION

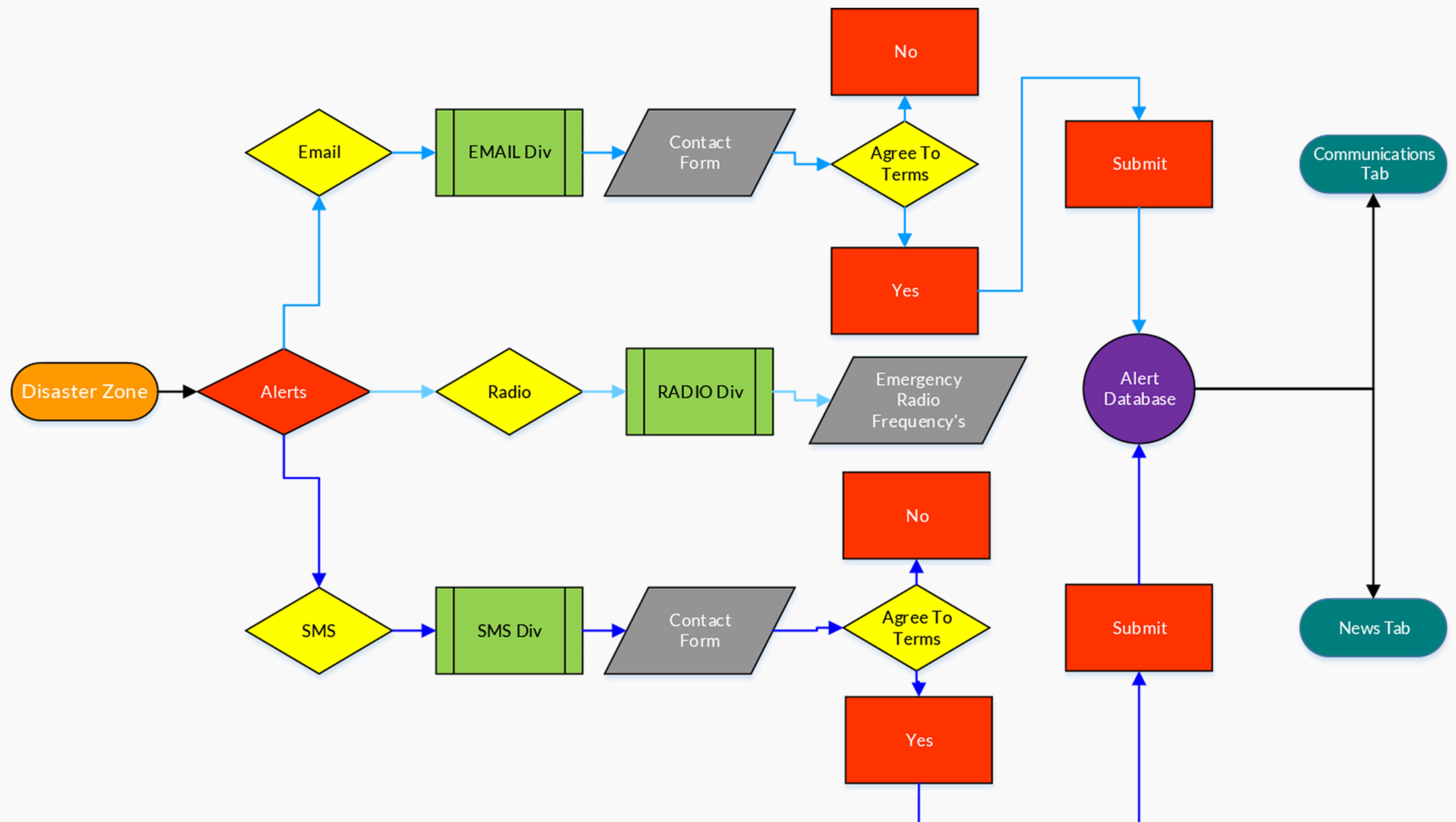
KEY



DISASTER ZONE

FLOWCHART

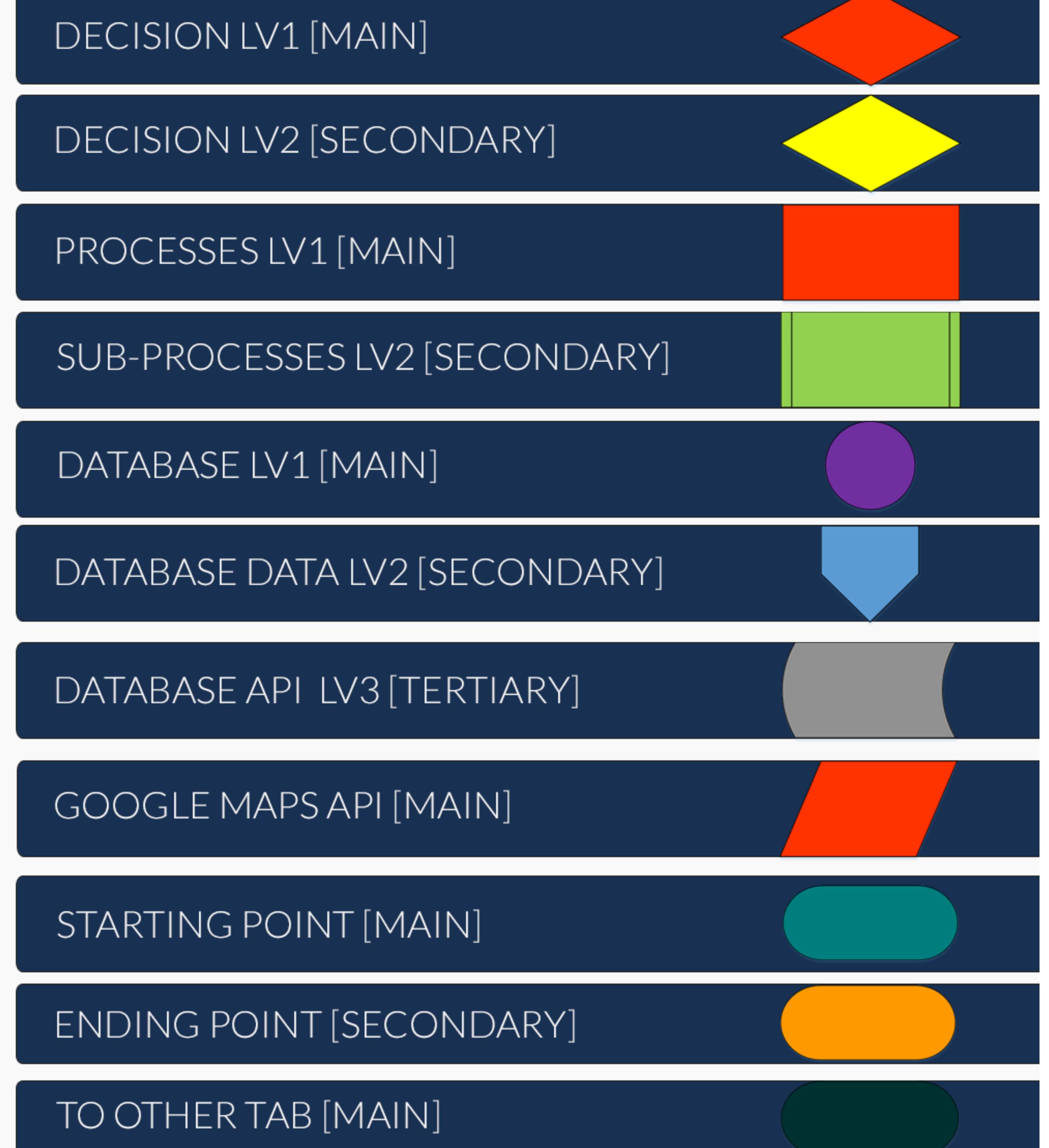
ALERT



KEY

GREEN ELEMENTS = INTERACTION

KEY



DISASTER ZONE

COLOR SCHEME

DISASTER ZONE

News

Earthquake New Zealand
[Light]

A light Earthquake 3.5 magnitude on the Richter scale centred 25 km of Taumarunui has struck New Zealand. Reports of light damage to houses and pathways some water piping and sewage may have been affected. Be ready for aftershocks make sure to have your earthquake survival kits ready. Tune into local radio stations and news broadcasts for up-to date information, we will continue monitoring the situation and update as the situation unfolds. To view up-to date information on earthquakes in New Zealand please visit Geonet , any reports on damages or further aftershocks update us on updates@disasterzone.com

Bushfire Western Australia [Severe]

A large bush fire is burning across Western Australia more than 80,000 hectares of forest has been affected. The fire has been burning for several days now local authorities of Perth have declared this event a natural disaster; people affected are eligible for state assistance. Residences of Perth are being asked to prepare for an evacuation if the fire cannot be stemmed over the next 48 hours. Dry conditions high temperatures over the past month are to blame, for this rampant out of control bush fire. Keep up to date with the latest information, on this ongoing event here and on local via radio and TV broadcasts.

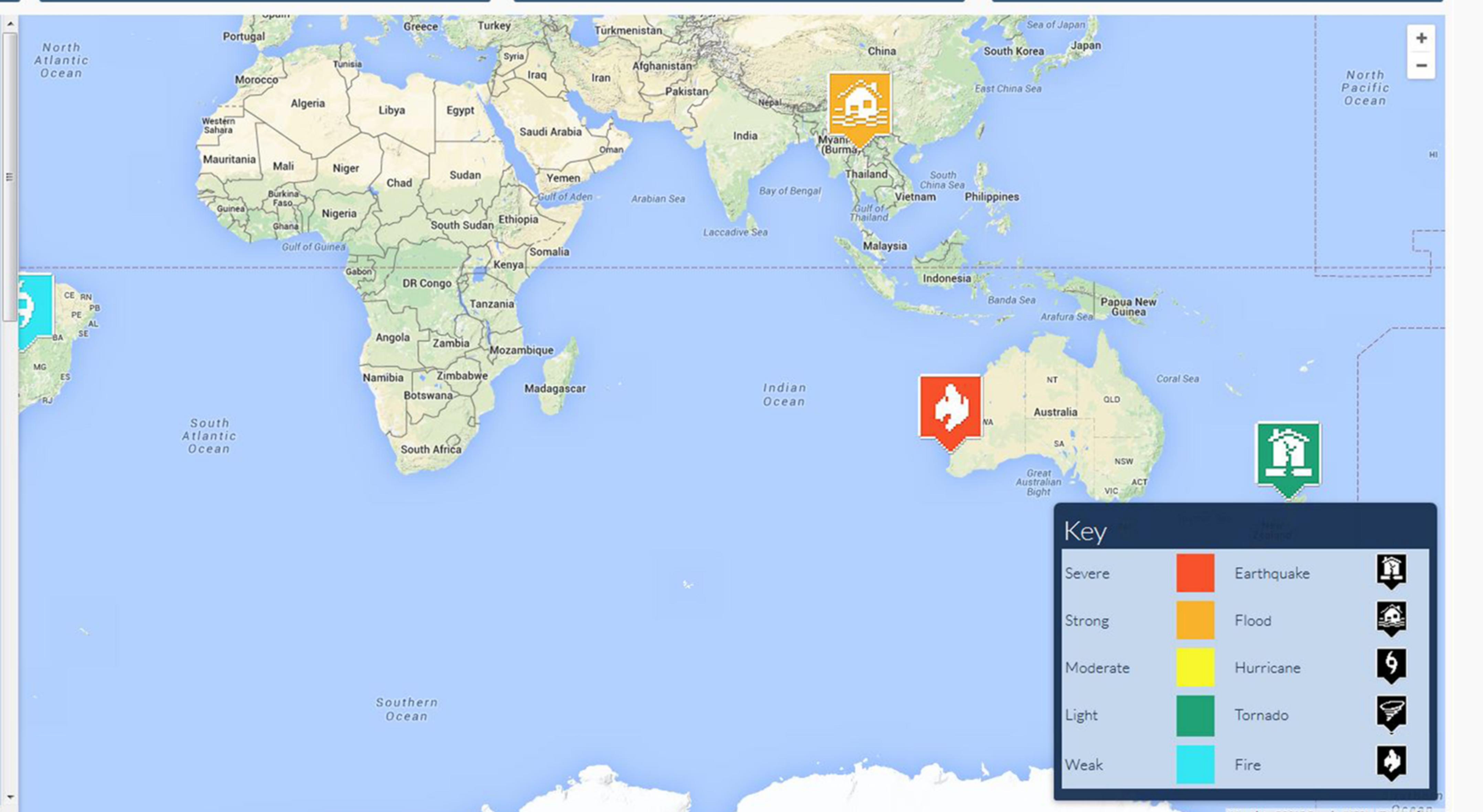
Google

Prepare

Communication

Alerts SMS EMAIL RADIO

Help Out



HEADER H1

HEADER H2

A:LINK

DIV EXPAND

PARAGRAPH

COLOR PALETTE

TITAN WHITE

SPINDLE

REGENT ST BLUE

CHAMBRAY

NILE BLUE



DISASTER ZONE

GOOGLE MAPS API

A main feature of Disaster Zone the implementation of google maps API, allowing for waypoints of disasters and hover events that update information on the Disaster Zone website. It has all been customised for this project with custom weigh points and events, due to time constraints simulated disaster events are shown in this demo as a proof of concept.

Google Maps API is used to show events in the world and give the ability, for fast quick information for the users of Disaster Zone. At a glance can see the level of disaster and enable the user to help out donate. Or be aware of a developing situation in their area. News items update when a event is displayed on map, and map changes centre location to focus over the latest event unfolding in the world.

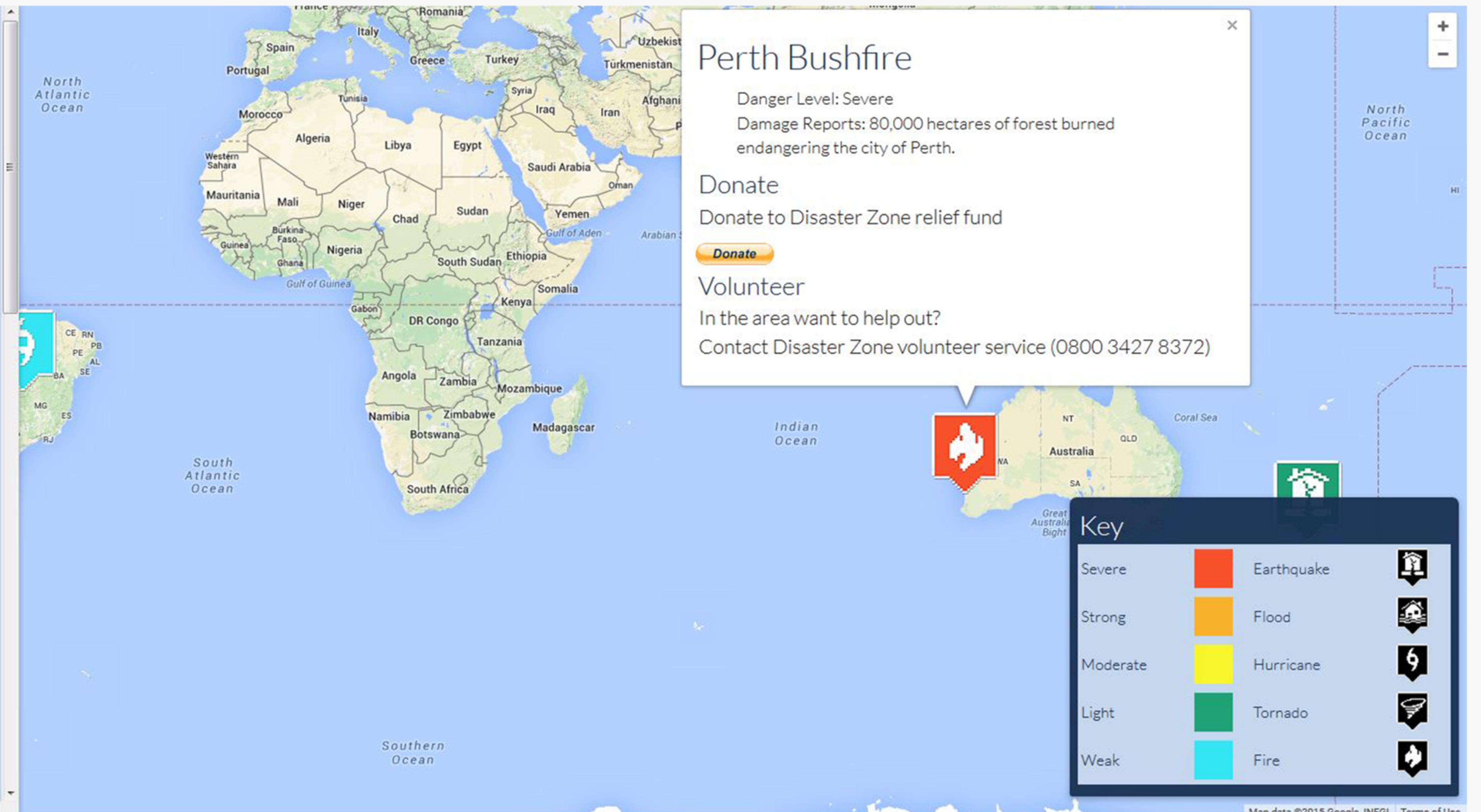
Earthquake New Zealand [Light]

A light Earthquake 3.5 magnitude on the Richter scale centred 25 km of Taumarunui has struck New Zealand. Reports of light damage to houses and pathways some water piping and sewage may have been affected. Be ready for aftershocks make sure to have your earthquake survival kits ready. Tune into local radio stations and news broadcasts for up-to date information, we will continue monitoring the situation and update as the situation unfolds. To view up-to date information on earthquakes in New Zealand please visit [Geonet](#), any reports on damages or further aftershocks update us on updates@disasterzone.com

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Google



DISASTER ZONE

SEVERITY SCALE

Severity scale and impact below is the Disaster Zone severity scale generalised how an event is given its disaster level. Each level is defined by the methods below, to give the users of the site an idea on how a disaster and event gets its disaster level assigned to it this list is generalised.

Severe

- Severe level of damage to people and or property, high risk of injury and human casualty's. 10,000+ people missing or injured 70% damage to personal property and city infrastructure.

Strong

- Strong level of damage to people and or property, medium high risk of injury and human casualty's. 5,000 to 8,000 people missing or injured 60% damage to personal property and city infrastructure.

Moderate

- Moderate level of damage to people and or property, medium risk of injury and humzn casualty's. 500 to 1,000 people missing or injured 30% damage to personal property and city infrastructure.

Light

- Light level of damage to people and or property, low risk of injury and human casualty's. 0 to 100 people missing or injured 0% to 15% damage to personal property and city infrastructure.

Weak

- Weak to no damage to people and or property, low to risk of injury and human casualty's. 0 people missing or injured 0% to 5% damage to personal property and city infrastructure.

DISASTER ICONS

Due to the nature of Disaster Zone it's important to have custom icons for each natural disaster and event that is recorded and reported on Disaster zone, I went for simple icons that covey the type of disaster easily at a quick glance on the screen.

Due to the Disaster Zone severity scale each disaster is rated out of five different levels of severity each item in the severity scale has a corresponding colour and a general overview of what each level of disaster might entail for a general overview of how the Disaster Zone severity scale works.

Followed individual criteria for each disaster type. Disaster Zone icons are from creative commons by Nicolas Mollet edited by me for this project mapicons.mapsmarker.com.



Earthquake



Flood



Hurricane



Tornado



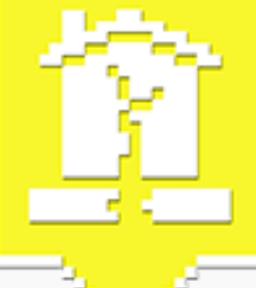
Fire

DISASTER ZONE

SEVERITY SCALE

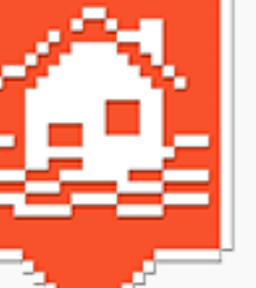
EARTHQUAKE

Earthquake is a shaking of the ground caused by sudden breaking and movement tectonic plates colliding with each other most commonly along fault lines. Earthquakes can cause severe damage to buildings and landscapes, Earthquakes can push up new areas of land and have a tendency to cause Tsunamis. Earthquakes are measured in Richter-Scale in order to rate the severity of the event Disaster Zones severity scale for earth quakes is found below.

SEVERITY	DETAILS
 Severe	8 or higher. Serious damage
 Strong	7.0 – 7.9 High Damage
 Moderate	6.1 – 6.9 Medium Damage
 Light	6.0 and under Slight damage
 Weak	3.5 Little to no damage

FLOOD

Flood is a natural event or occurrence where a land, river or area that is usually dry suddenly gets submerged underwater. Floods can occur suddenly without warning, or build up for months and take a long time to subside. Flooding causes severe damage to houses and infrastructure and a high risk to safety. Floods are measured in meters of water above the standard water level in order to rate the severity of the event Disaster Zones severity scale for floods is found below.

SEVERITY	DETAILS
 Severe	5.5m
 Strong	4.64m
 Moderate	3.2m
 Light	2.20m
 Weak	0.60m

DISASTER ZONE

SEVERITY SCALE

HURRICANE

Hurricanes are powerful low pressure spiral weather systems that create a massive storm consisting of powerful winds rain thunder and lighting. Hurricanes can last for weeks and create havoc on buildings land ripping up roofs knocking out power and city infrastructure. Hurricanes pose a serious risk to personal property and personal safety. Hurricanes severity is measured in Saffir Simpson Scale as a standard Disaster Zone Severity scale for Hurricanes is found below.

SEVERITY	DETAILS
 Severe	>249 KPH
 Strong	210 - 249 KPH
 Moderate	178 - 209 KPH
 Light	154 - 177 KPH
 Weak	119 - 151 KPH

TORNADO

Tornados are violent storms that extend from clouds to the ground in a funnel like shape they are one of the most destructive wind weather systems. They are most common in USA there is little to no warning for when a Tornado might form which makes it hard to prepare for an incoming Tornado. Tornados pose a serious risk to personal property infrastructure and safely of people. Tornados are measured in Fujta Scale. Disaster Zone severity scale for tornados is found below.

SEVERITY	DETAILS
 Severe	267 - 321+ KPH
 Strong	234 - 265 KPH
 Moderate	178 - 217 KPH
 Light	138 - 177 KPH
 Weak	104 - 136 KPH

DISASTER ZONE

SEVERITY SCALE

WILD FIRE



Fires burning out of control pose a serious risk to wildlife and human populations, they are a destructive force that can be almost impossible to control and can spark up at any time during extend dry periods. Fires pose a serious risk to human settlements infrastructure and buildings, can spread rapidly and be difficult to contain and get away from. Disaster Zone severity scale for fires is found below, depending on what level of risk the fire presents.

SEVERITY



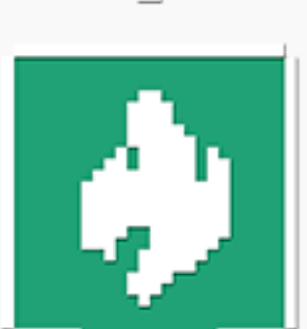
Severe



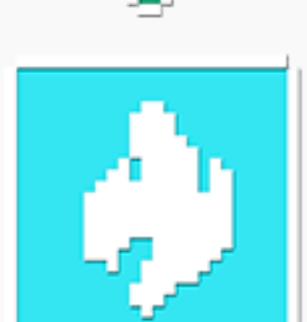
Strong



Moderate



Light



Weak

DETAILS

- 75+ [Fire uncontrollable and unpredictable thousands of homes may be destroyed and casualties expected]
- 50 – 74 [Fire uncontrollable chance for causality's and destruction of property]
- 25 – 49 [Fire difficult to control damage to property may be damaged or destroyed]
- 12 – 24 [Fires can be controlled damage to property is limited]
- 0 – 11 [Fire can be easily controlled]

CODE REF

All code for API has been adapted from google official documentation, along with my own twist and takes on code. All sources of code can be found below. I have a In-depth knowledge of code so only api related code I had to look up in how it functions then adapt it to my needs for this project.

- <https://developers.google.com/maps/documentation/javascript/examples/map-coordinates>
- <https://developers.google.com/maps/documentation/javascript/examples/event-simple>
- <https://developers.google.com/maps/documentation/javascript/examples/control-simple>
- <https://developers.google.com/maps/documentation/javascript/examples/maptype-styled-simple>
- <https://developers.google.com/maps/documentation/javascript/examples/marker-symbol-custom>
- <https://developers.google.com/maps/documentation/javascript/examples/map-simple>
- <https://developers.google.com/maps/documentation/javascript/examples/map-geolocation> [attempted but failed]
- <https://developers.google.com/maps/documentation/javascript/3.exp/reference>
- <https://developers.google.com/maps/documentation/embed/?hl=en>
- <https://developers.google.com/maps/documentation/javascript/examples/control-positioning>
- <https://developers.google.com/maps/documentation/javascript/controls>
- <https://developers.google.com/maps/documentation/javascript/examples/icon-complex?hl=en>
- <http://morning.am/tutorials/how-to-style-google-forms/>

DISASTER ZONE

HOW IT WORKS

GOOGLE API [JS]

Google Maps API is used to show events in the world and give the ability, for fast quick information for the users of Disaster Zone. At a glance can see the level of disaster and enable the user to help out donate. Or be aware of a developing situation in there area. News items update when a event is displayed on map, and map changes centre location to focus over the latest event unfolding in the world.

MARKERS

Markers are displayed on map to mark where the disaster events are unfolding in the world below is how the code works to create the markers.

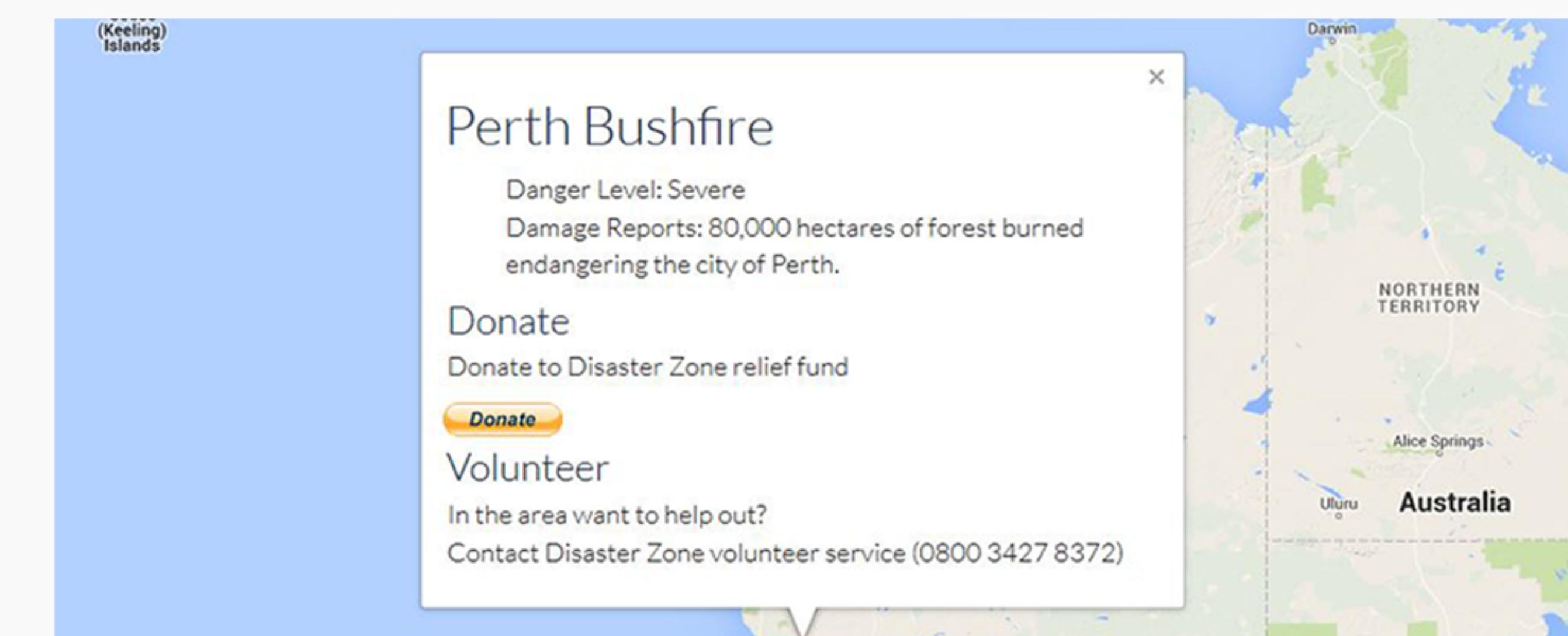
- Markers are created by a looped function called setInterval in the initMap function; markers get their positions from LatLng variable that is loaded from mapPositions array. Depending on its index, the position array changes on each loop of the creation of a marker is by incrementing the variable by 1, each marker is created as a new google marker as separate instance.



- Custom marker icons are stored into an iconArray that is incremented by 1 each loop. A variable called icon is loaded into the setInterval function for each new marker that is created. This allows for custom icons for each marker event when they are created using the setInterval function.

INFO WINDOW

- On click on each marker an info window Is displayed with the corresponding data for that marker event marked on the map. This functionally is created in the setInterval function data variable that is stored for each marker in mapMarkers array. Data variable is called each loop in the creation of a marker and the mapMarkers array is incremented by 1 to change its index. This array sets the infowindow content in the googleAPI info window by injecting html into the info window and setting the on hover to the event name.



DISASTER ZONE

HOW IT WORKS

ANIMATION

- To simulate the feel of Disaster Zone being a realtime disaster website, I have set an animation time in the creation of the markers in the setInterval function.

MAP KEY

- Map key is no longer a floating div over the Google API, but is a API UI element. It is created using the CenterControl function. This function creates divs and set the style of the main container div. Followed by injecting HTML code into this newly created UI element div container of the Google API.

NEWS

- To allow the simulation of real time events news feed element had to be moved from the HTML + CSS to a custom Google Maps API UI element. In order for the api to be able to call and change code of this element. This element is created in the NewsControl function and functions the same as the Map key. Injecting styled HTML into a google maps API UI element. Array of newsHide defines which element should display, so that the correct news element is displayed with the corresponding event marker on map. A if else statement and newsShow array is used to show or hide news elements, so that the correct news element is displayed with the corresponding marker. This is done by removing the hidden id from the injected HTML to display this item in the main news feed container UI element.

MAP LOCATION

- Map auto centres to newest event marker it functions by creating a new variable called centre and making it equal to variable of myLatLng that gets its value from the markerPosition Array. This data is then used to pan to the variable of myLatLng.

INTERFACE [HTML + JS + CSS]

- Due to the single page design of Disaster Zone the showing and hiding of divs is the way around making the user load many pages. Instead it's all one page with divs that on click show or hide elements of the page. I wrote a bool so it counts on click if user has clicked on something, then using an if else statement.

On click of the Main Google Api container it clears all open elements. So they are reset to there off state, this allows the user to open many elements of the website. But then clear them easily with one click. See inline comments in HTML + CSS + javaScriptCustom for more information.

END

- Created By Arapaoa Moffat (300317288)
- VUW 2015 MDDN201
- GitHub: <https://github.com/Mickmoffat/disasterZoneP3API>