GESTIÓN DE DATOS DE SEGURIDAD VIAL

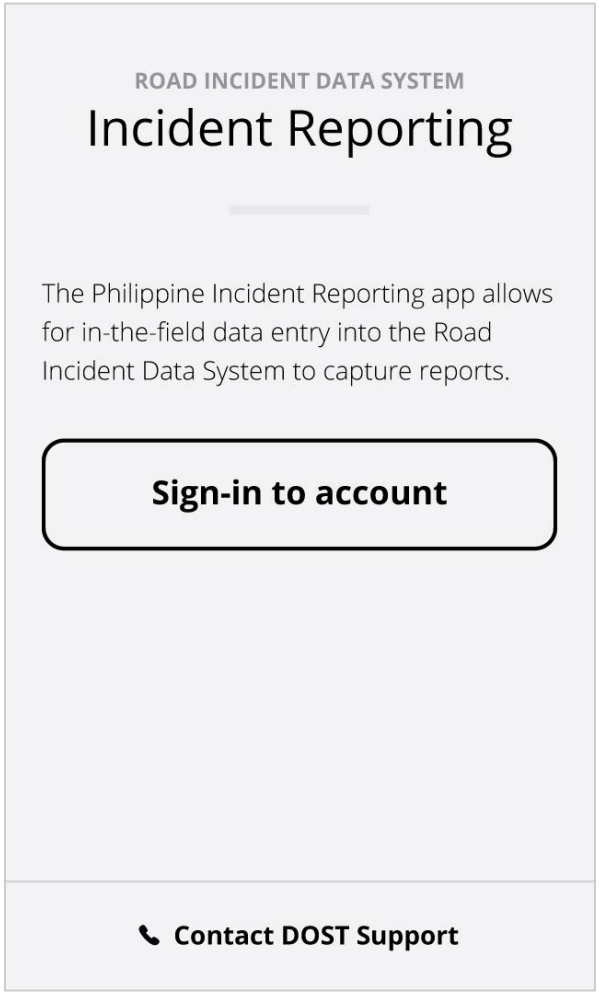
PLATAFORMA PARA DATOS DE INCIDENTES (DRIVER)

Transport
Global Practice
Smart Connections for All

Veronica I. Raffo
Especialista Senior en Infraestructura
Safer City Streets
Buenos Aires – 10 & 11 de Abril 2019

AGENDA

- Consideraciones Generales
- Generalidades de DRIVER
- Captura de Datos
  - Aplicación Android
  - Digitalización de Registros en la Web
- Editor de Campos
- Dashboard de Visualizaciones
- Reportes
- Plataforma Pública
- Desarrollos Futuros
- Proceso de Implementación



CONSIDERACIONES GENERALES

Datos confiables son esenciales para:

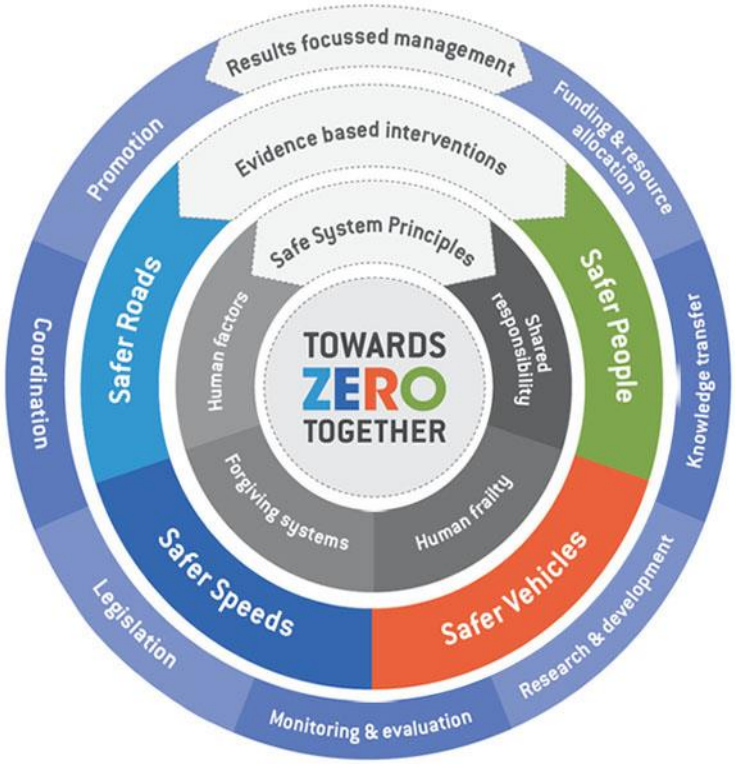
- Priorizar agenda de salud pública
- Determinar naturaleza del problema (Quién? Cuándo? Por qué?)
- Evaluar costos económicos reales asociados a siniestros viales
- Diseñar las intervenciones de seg. vial más costo-efectivas
- Monitorear progreso y ajsutar estrategia y plan de trabajo

Datos sobre maginutud del problema y factores de riesgo son esenciales para desarrollar un efoque sistémico en seg. vial: **DATOS** esta en el centro del **ENFOQUE DE SISTEMA SEGURO**

Generar líneas de base como herramienta de gobierno para diseñar intervenciones, evaluar efectividad de programas y **monitorear progreso global**

Para diseñar una línea de base efectiva, es necesario identificar:

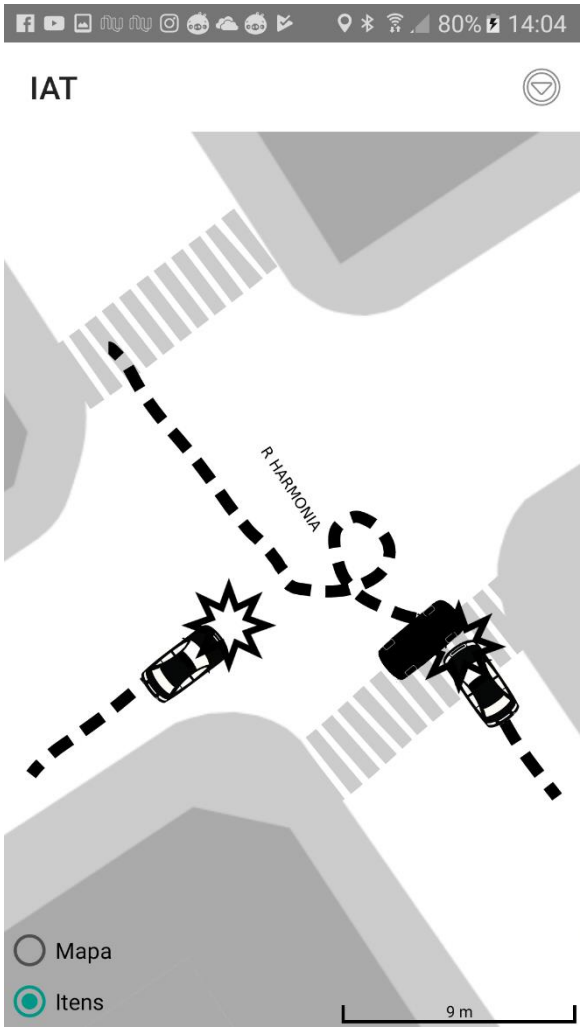
- Agencias involucradas en recoleccion, procesamiento y uso de datos de Seguridad vial;
- Fuentes y sistemas de datos en operación, sus fortalezas y limitaciones;
- Necesidades de usuarios finales;
- Factores politicos que pueden ayudar o entorpecer el mejoramiento de los sistemas de datos de Seguridad Vial.



“La disponibilidad de datos y el análisis de informacion es una herramienta clave para desarrollar una planificación estratégica”

CONSIDERACIONES GENERALES

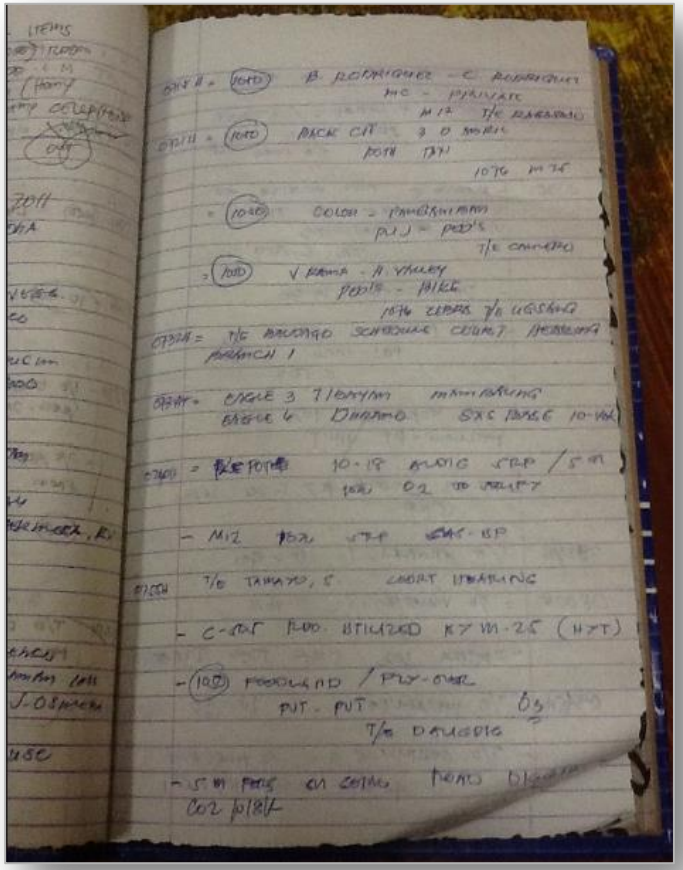
- Algunos requisitos básicos de un sistema de datos de accidentes:
  - Reportar todas las fatalidades y lesiones graves
  - Proveer suficiente información sobre los vehículos y personas involucrados, y el ambiente (infraestructura, clima, fecha y hora)
  - Ubicación (coordenadas)
  - Procesamiento rápido para informar intervenciones



¿QUÉ ES DRIVER?

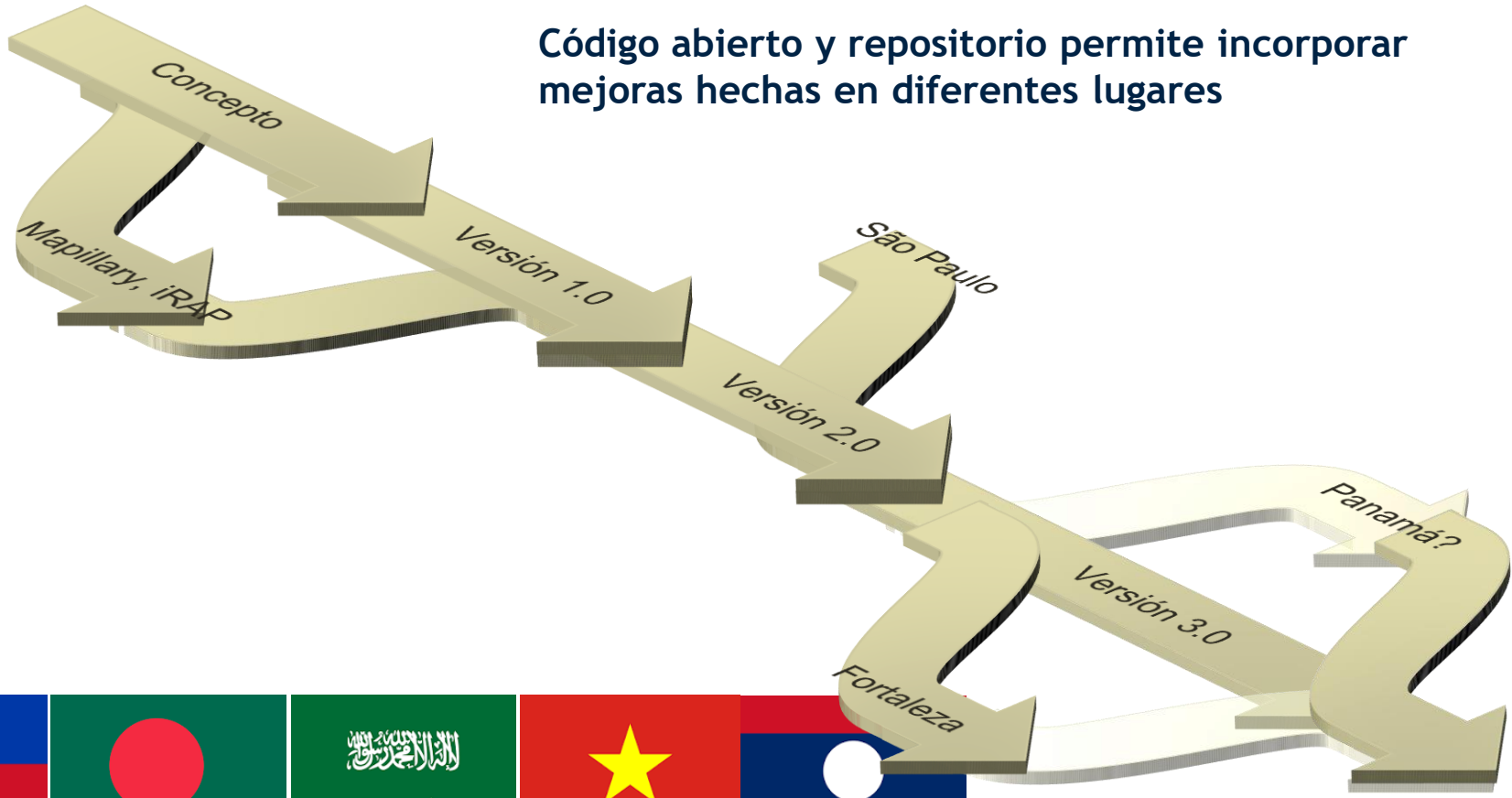
- Data for Road Incident Visualization, Evaluation and Reporting (DRIVER)
- Plataforma web de código fuente abierto para registro de incidentes viales
- Permite uniformizar términos y definiciones para reporte de incidentes (accidentes) de tránsito
- Conjunto de herramientas de análisis para toma de decisiones y para monitorear impactos
- Disponible en el repositorio de Github del Banco:
  - https://github.com/WorldBank-Transport/DRIVER

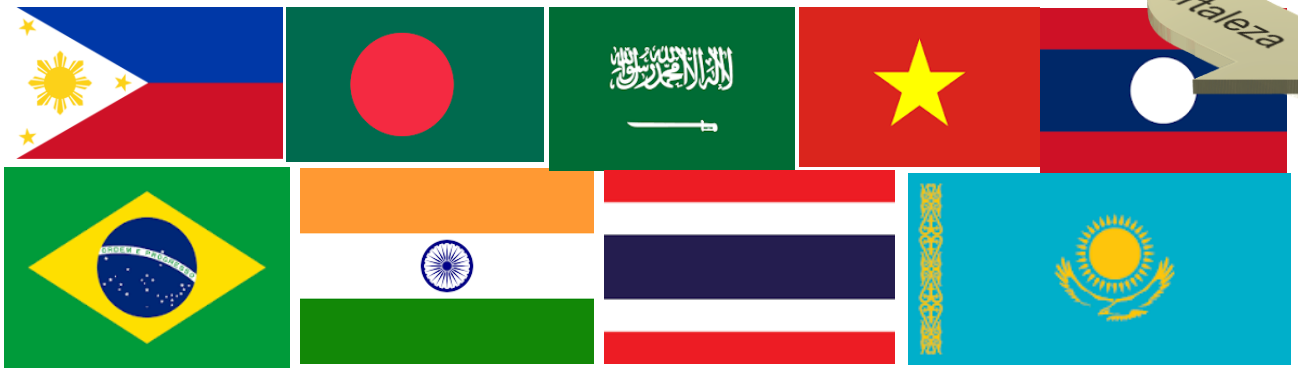
¿QUÉ ES DRIVER?

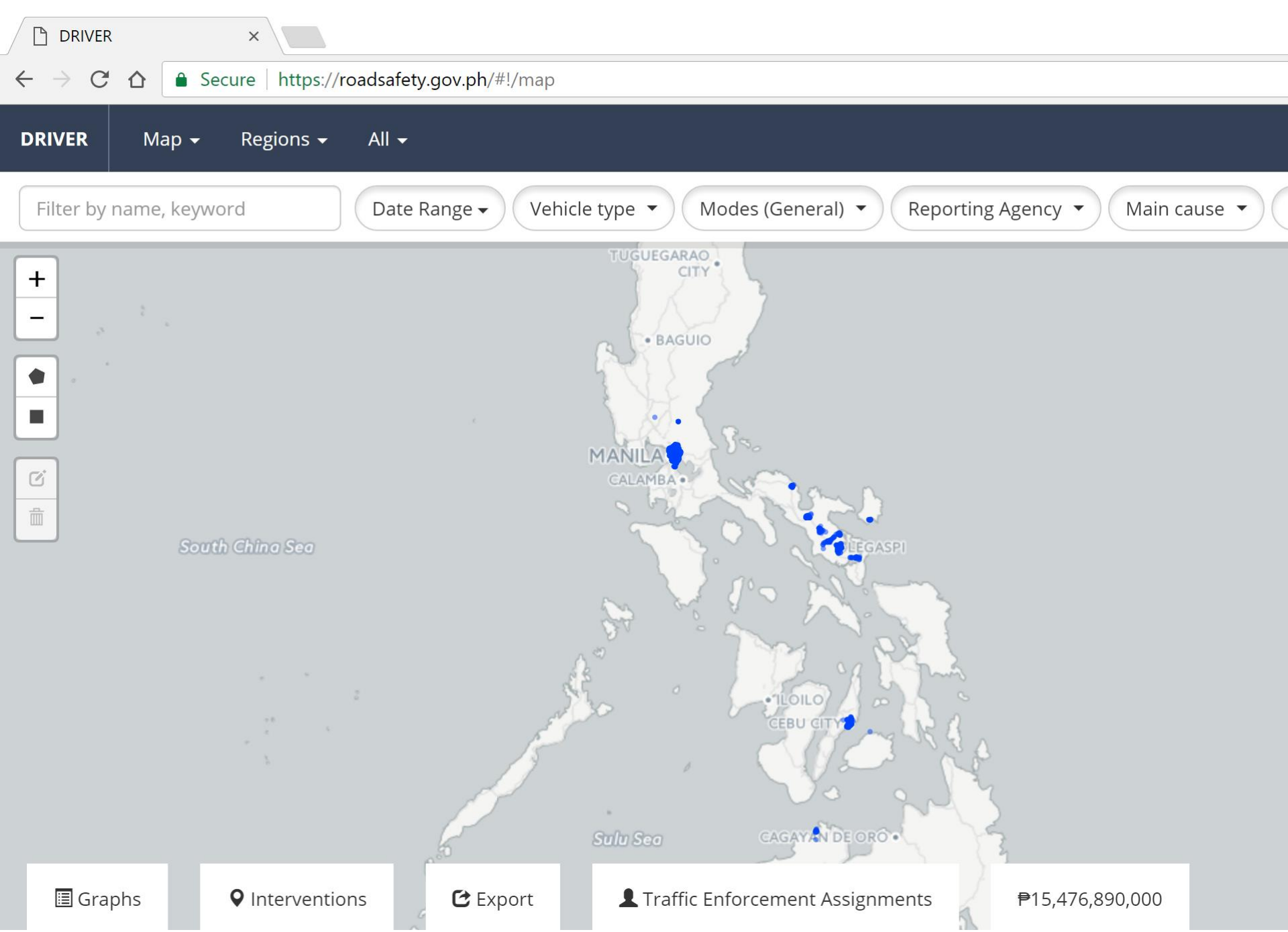


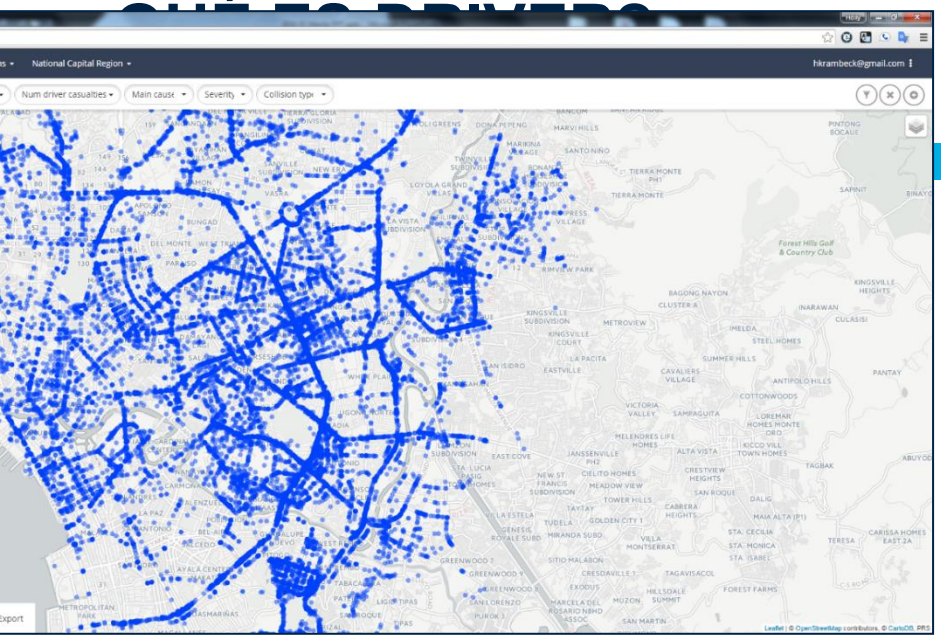
¿QUÉ ES DRIVER?

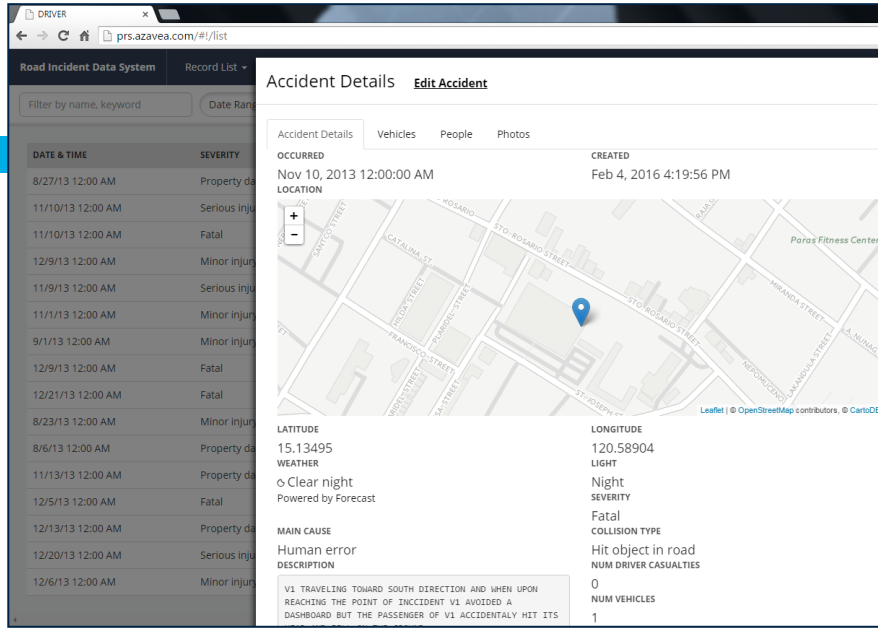
Código abierto y repositorio permite incorporar mejoras hechas en diferentes lugares

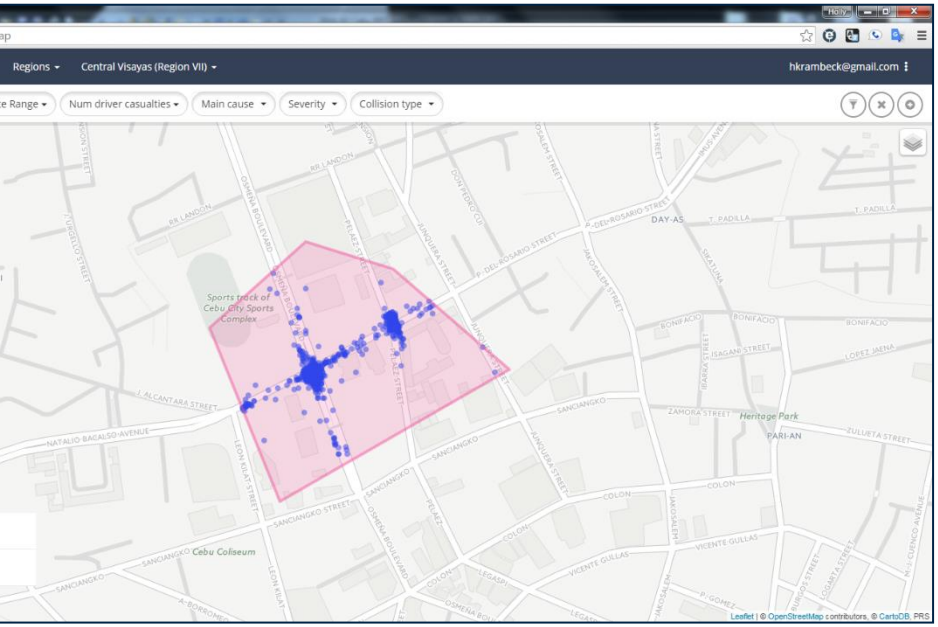


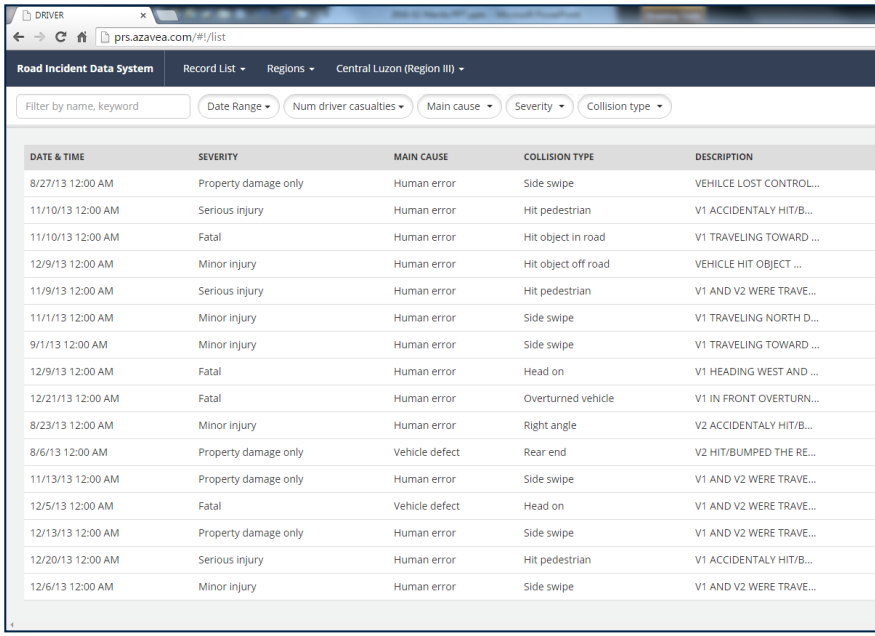



DRIVER
Secure
https://roadsafety.gov.ph/#!/map
DRIVER
Map
Regions
All
Filter by name, keyword
Date Range
Vehicle type
Modes (General)
Reporting Agency
Main cause
TUGUEGARAO CITY
BAGUIO
MANILA
CALAMBA
LEGASPI
South China Sea
ILOILO
CEBU CITY
Sulu Sea
CAGAYAN DE ORO
Graphs
Interventions
Export
Traffic Enforcement Assignments
₱15,476,890,000









DATE & TIME	SEVERITY	MAIN CAUSE	COLLISION TYPE	DESCRIPTION
8/27/13 12:00 AM	Property damage only	Human error	Side swipe	VEHILCE LOST CONTROL...
11/10/13 12:00 AM	Serious injury	Human error	Hit pedestrian	V1 ACCIDENTALY HIT/B...
11/10/13 12:00 AM	Fatal	Human error	Hit object in road	V1 TRAVELING TOWARD ...
12/9/13 12:00 AM	Minor injury	Human error	Hit object off road	VEHICLE HIT OBJECT ...
11/9/13 12:00 AM	Serious injury	Human error	Hit pedestrian	V1 AND V2 WERE TRAVE...
11/1/13 12:00 AM	Minor injury	Human error	Side swipe	V1 TRAVELING NORTH D...
9/1/13 12:00 AM	Minor injury	Human error	Side swipe	V1 TRAVELING TOWARD ...
12/9/13 12:00 AM	Fatal	Human error	Head on	V1 HEADING WEST AND ...
12/21/13 12:00 AM	Fatal	Human error	Overturned vehicle	V1 IN FRONT OVERTURN...
8/23/13 12:00 AM	Minor injury	Human error	Right angle	V2 ACCIDENTALY HIT/B...
8/6/13 12:00 AM	Property damage only	Vehicle defect	Rear end	V2 HIT/BUMPED THE RE...
11/13/13 12:00 AM	Property damage only	Human error	Side swipe	V1 AND V2 WERE TRAVE...
12/5/13 12:00 AM	Fatal	Vehicle defect	Head on	V1 AND V2 WERE TRAVE...
12/13/13 12:00 AM	Property damage only	Human error	Side swipe	V1 AND V2 WERE TRAVE...
12/20/13 12:00 AM	Serious injury	Human error	Hit pedestrian	V1 ACCIDENTALY HIT/B...
12/6/13 12:00 AM	Minor injury	Human error	Side swipe	V1 AND V2 WERE TRAVE...

¿QUÉ ES DRIVER?

Comité de Vías

Departamento de Transporte

Responsible por política y financiación de seguridad vial.

Implementa la política nacional de seguridad vial

Generadores de Datos

- Policía Nacional de Filipinas
- Agencias de Mantenimiento Vial
- Departmento de Salud

Usuarios de Datos

- Autoridad Vial
- Unidades de Planeación e Ingeniería
- Superintendencia de Transporte

Apoyo

- Departamento de Ciencia y Tecnología

CAPTURA DE DATOS

ROAD INCIDENT DATA SYSTEM

Incident Reporting

The Philippine Incident Reporting app allows for in-the-field data entry into the Road Incident Data System to capture reports.

Sign-in to account

Contact DOST Support

Incident Details Next

WHEN DID THIS INCIDENT OCCUR?

01/01/2015 00:00

INCIDENT TYPE

Traffic Accident

COLLISION TYPE

Head On

MAIN CAUSE OF ACCIDENT

Human Error

WHERE DID THE INCIDENT OCCUR?

25th St and 5th Ave

WEATHER CONDITIONS

Clear

LIGHT CONDITIONS

Daytime

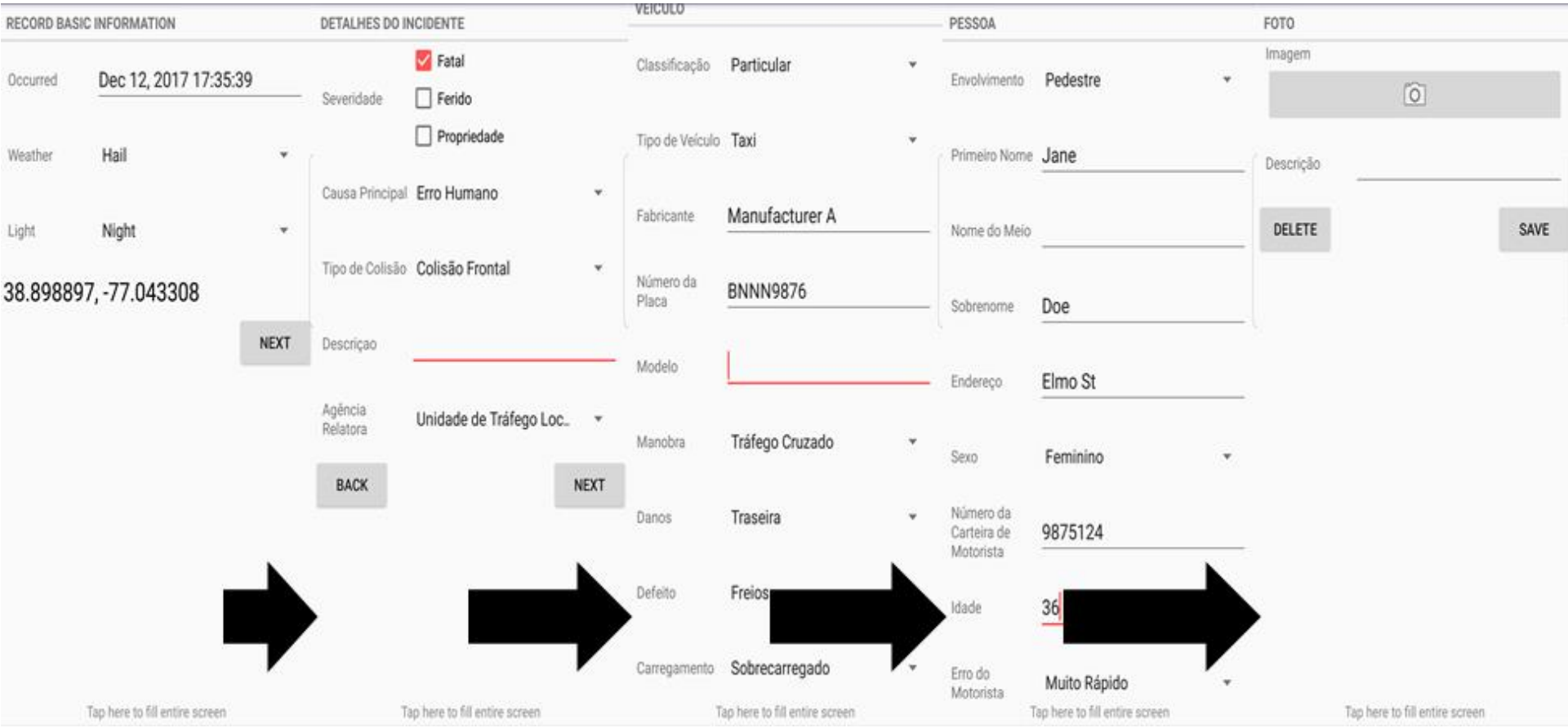
Incident Photos Next

Take photos of documents, incident details, weather and road conditions, vehicle defects, and other things you might need to reference again in the future.

Take a photo

WORLD BANK GROUP Transport

CAPTURA DE DATOS



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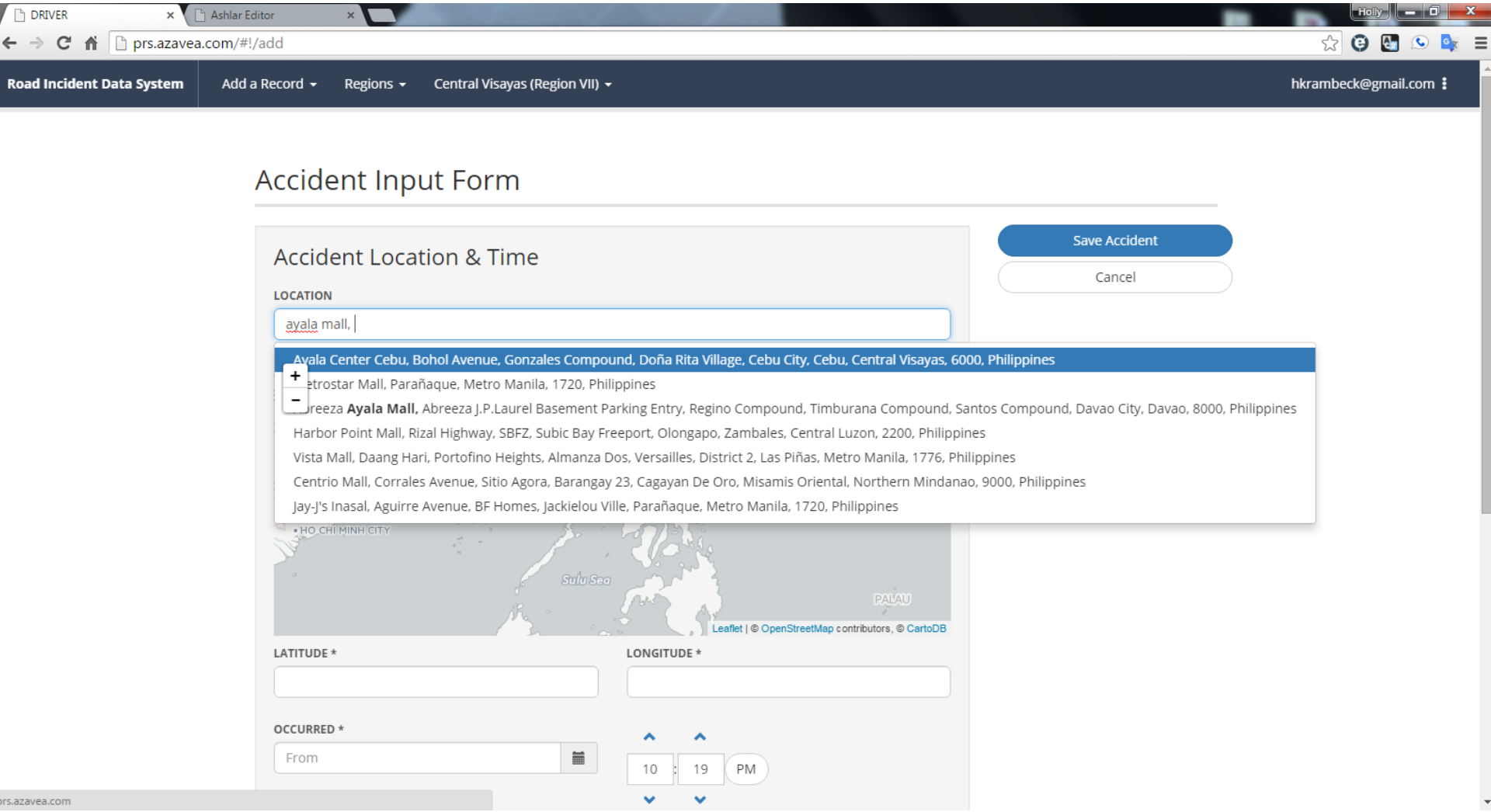

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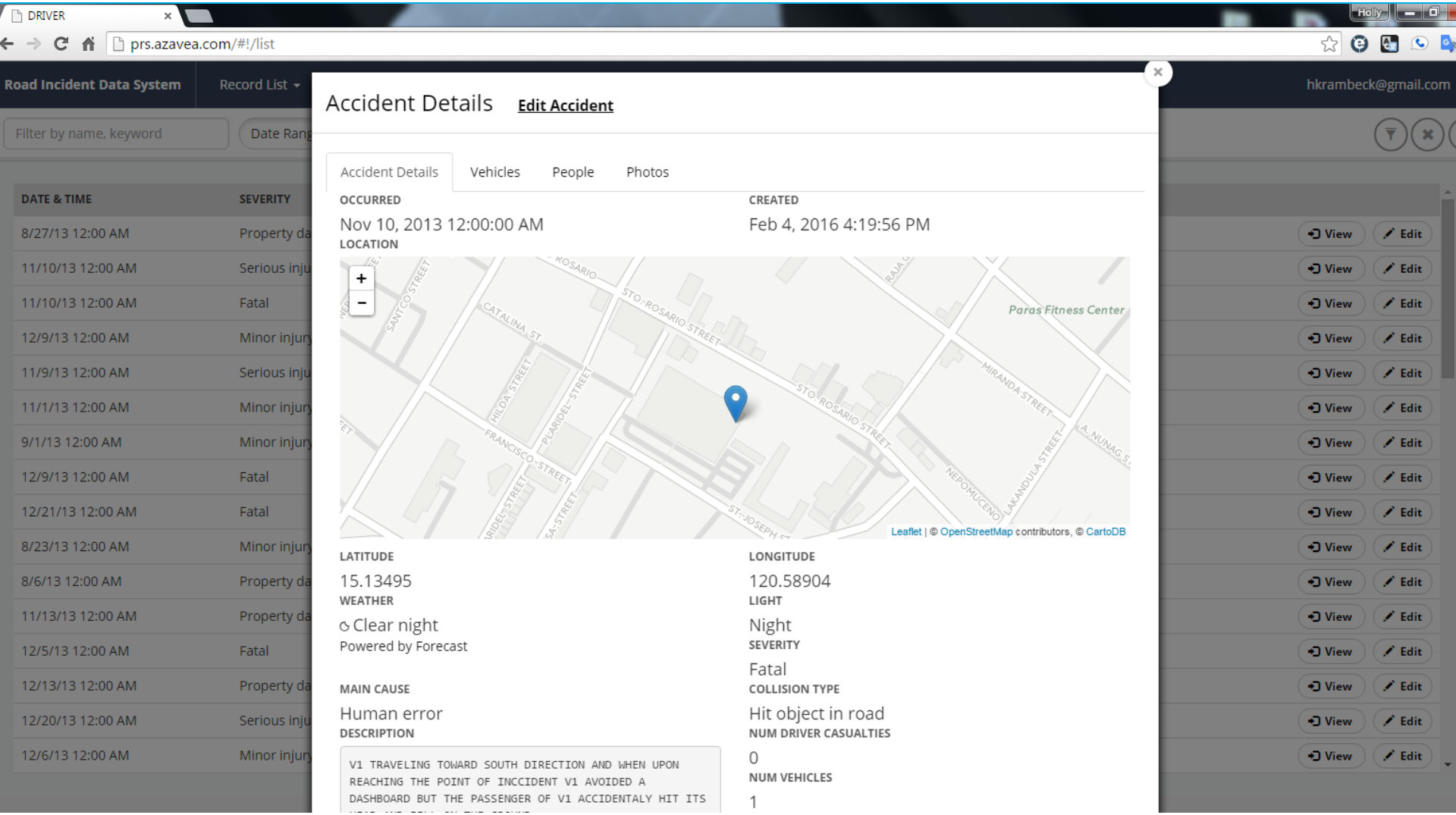

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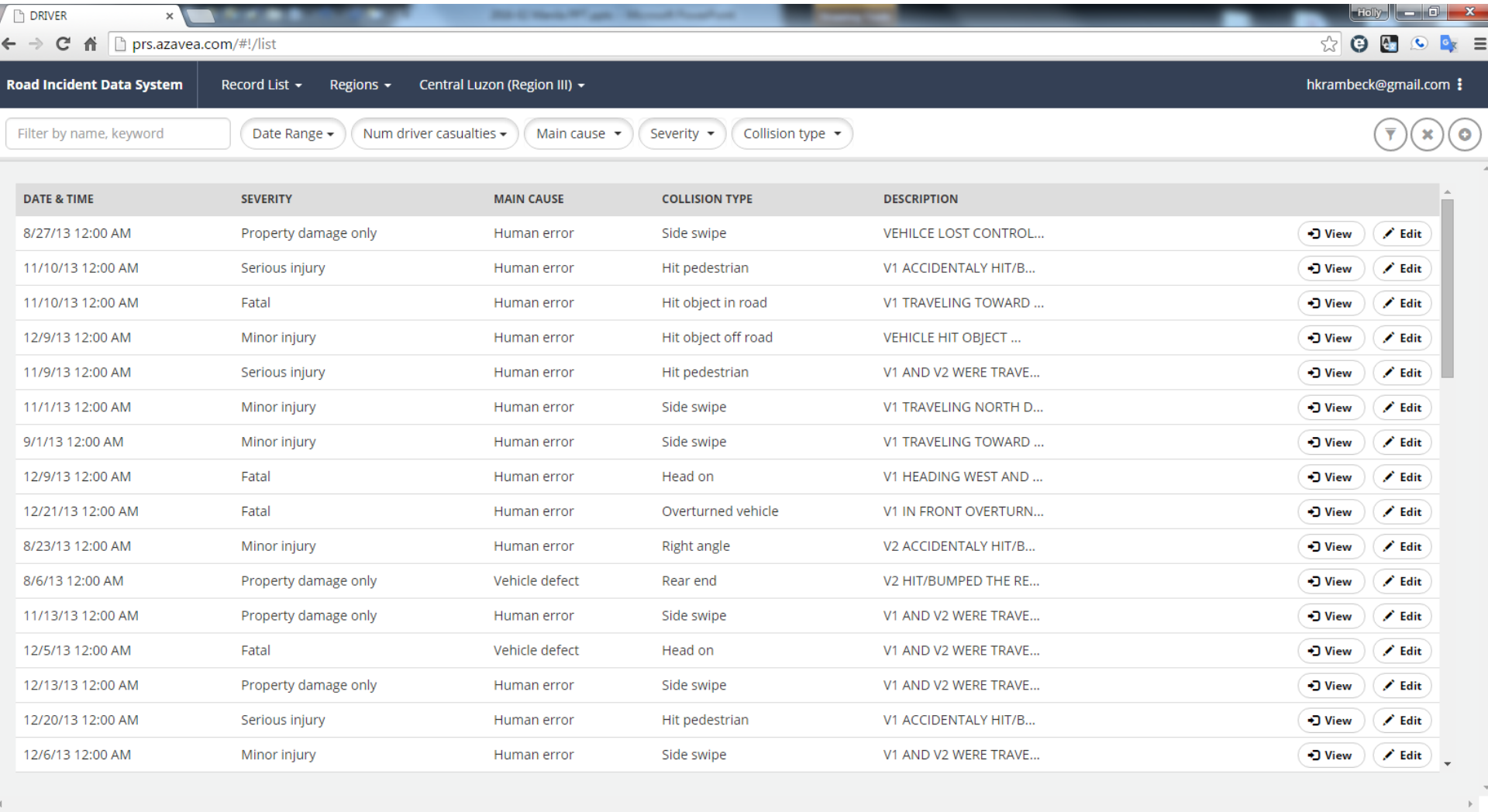

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12/5/13 12:00 AM	Fatal	Vehicle defect	Head on	V1 AND V2 WERE TRAVE...	View Edit
12/13/13 12:00 AM	Property damage only	Human error	Side swipe	V1 AND V2 WERE TRAVE...	View Edit
12/20/13 12:00 AM	Serious injury	Human error	Hit pedestrian	V1 ACCIDENTALY HIT/B...	View Edit
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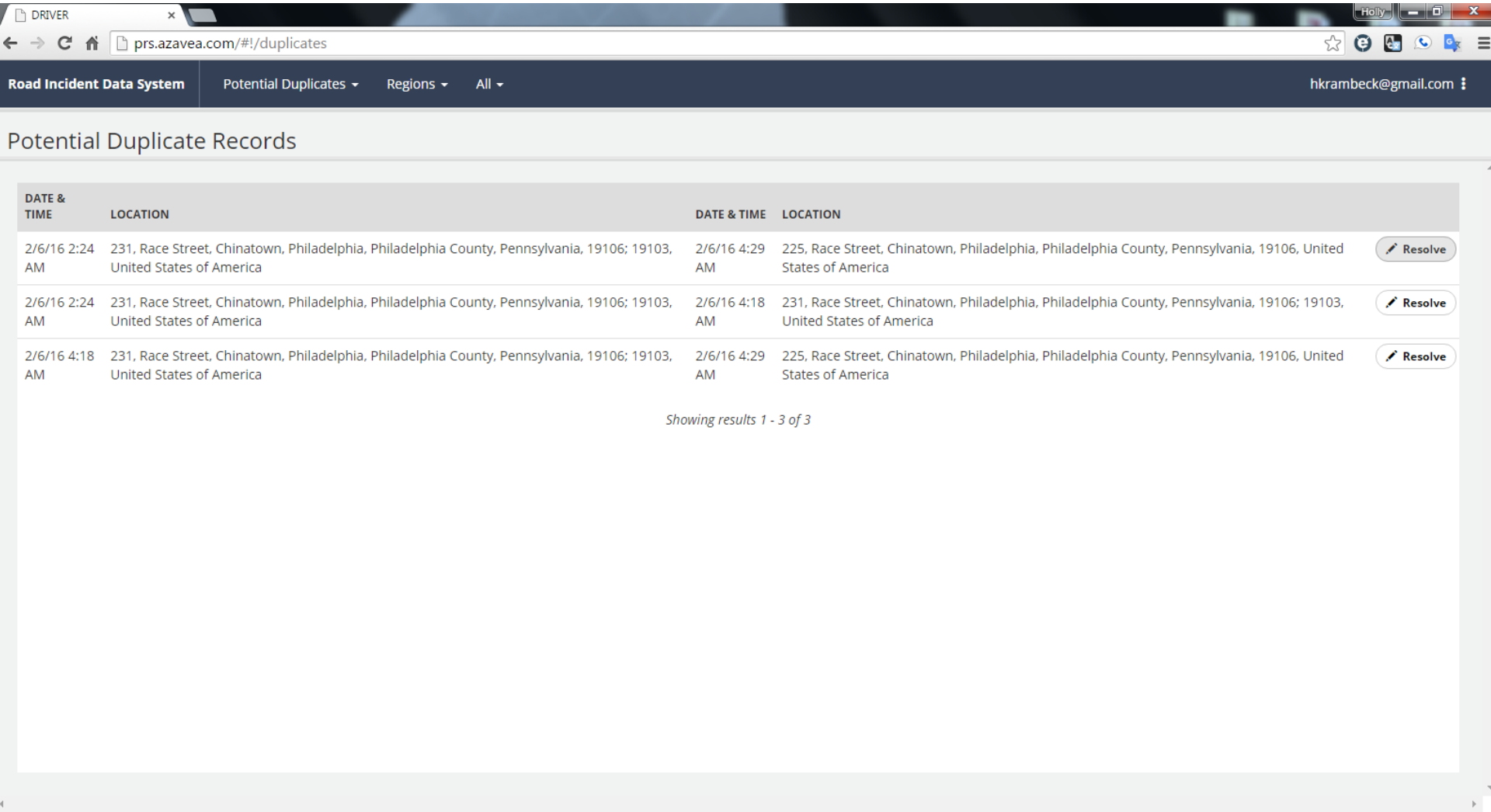

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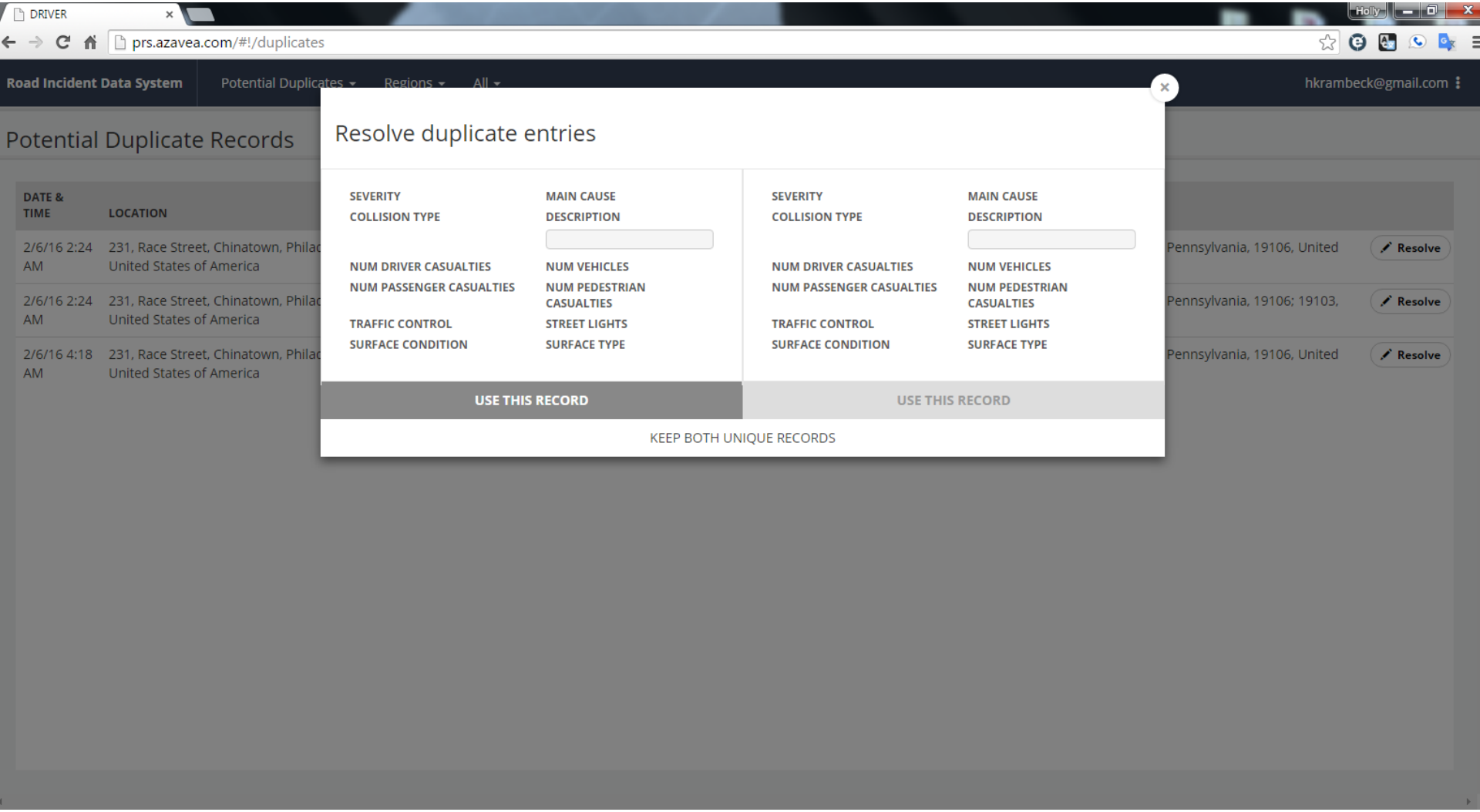

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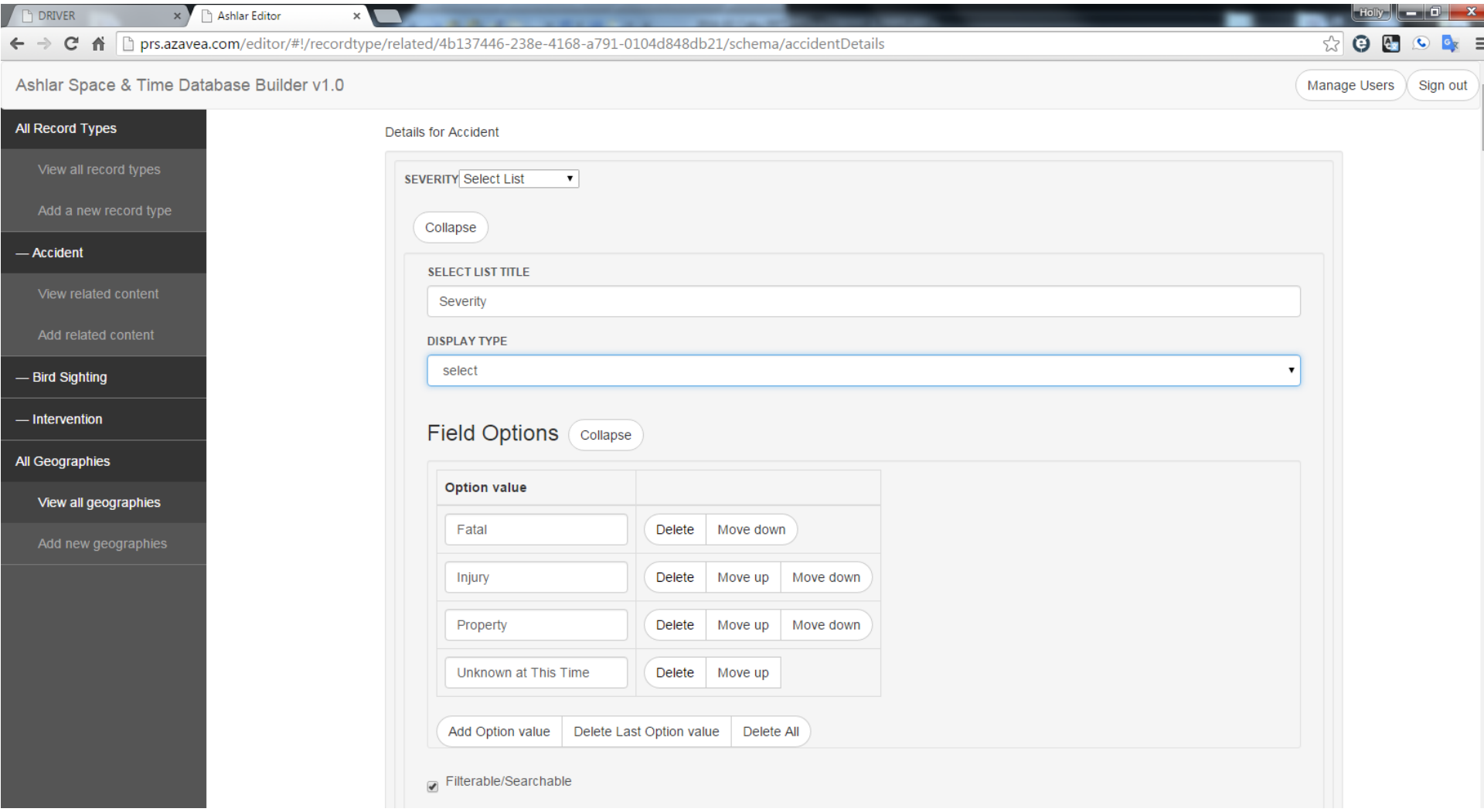
EDITOR DE CAMPOS



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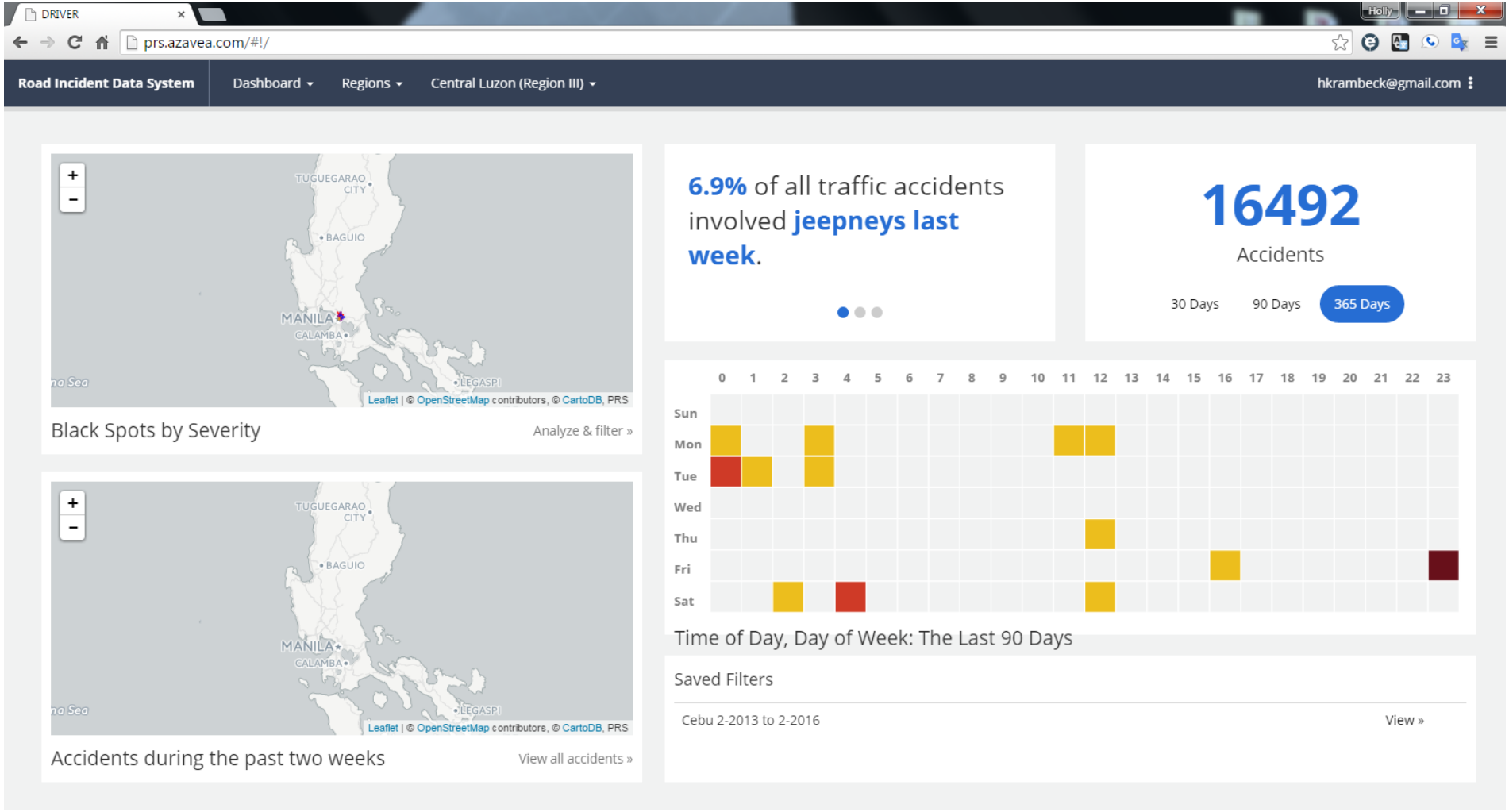
DASHBOARD DE VISUALIZACIONES



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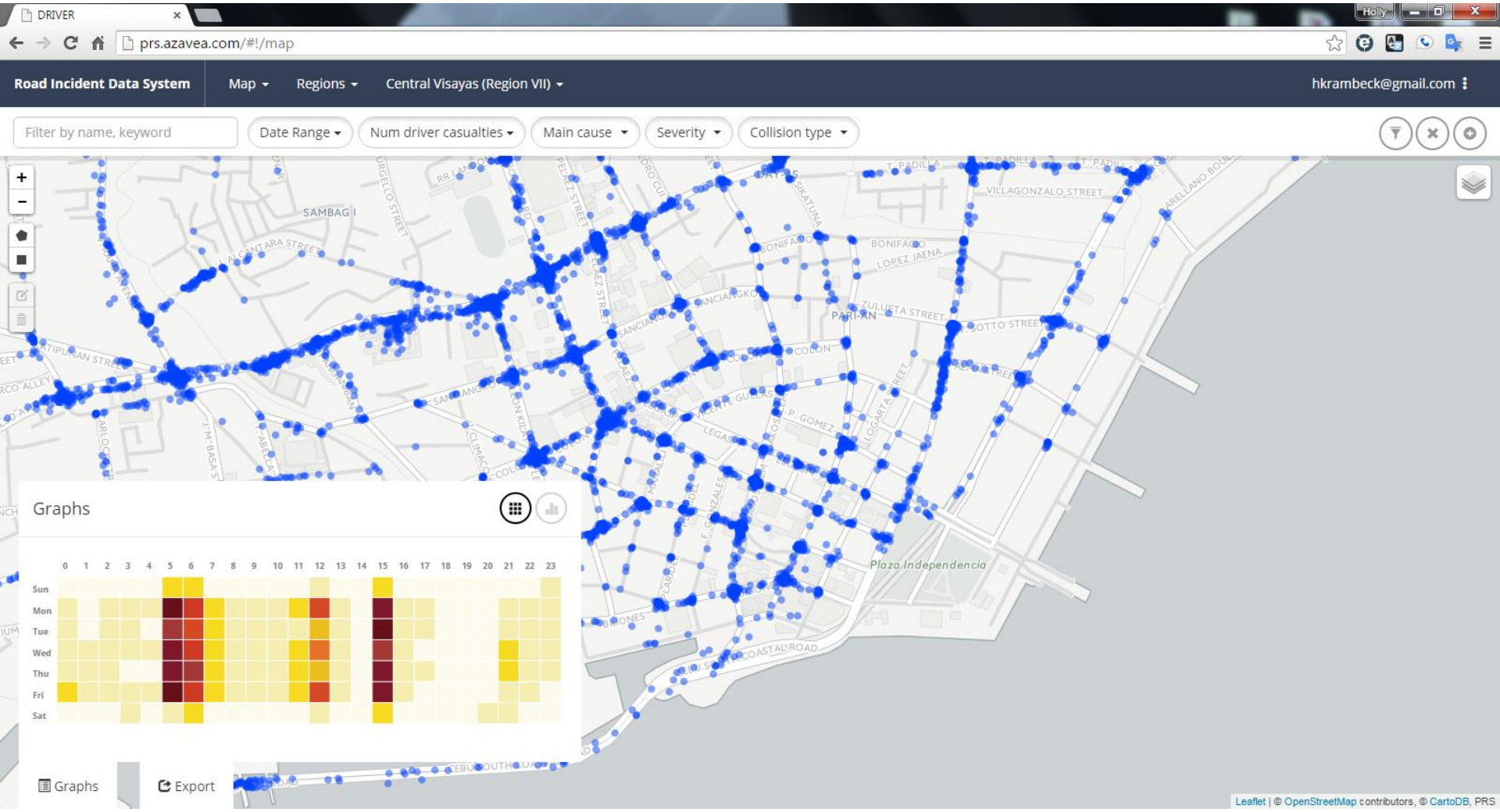

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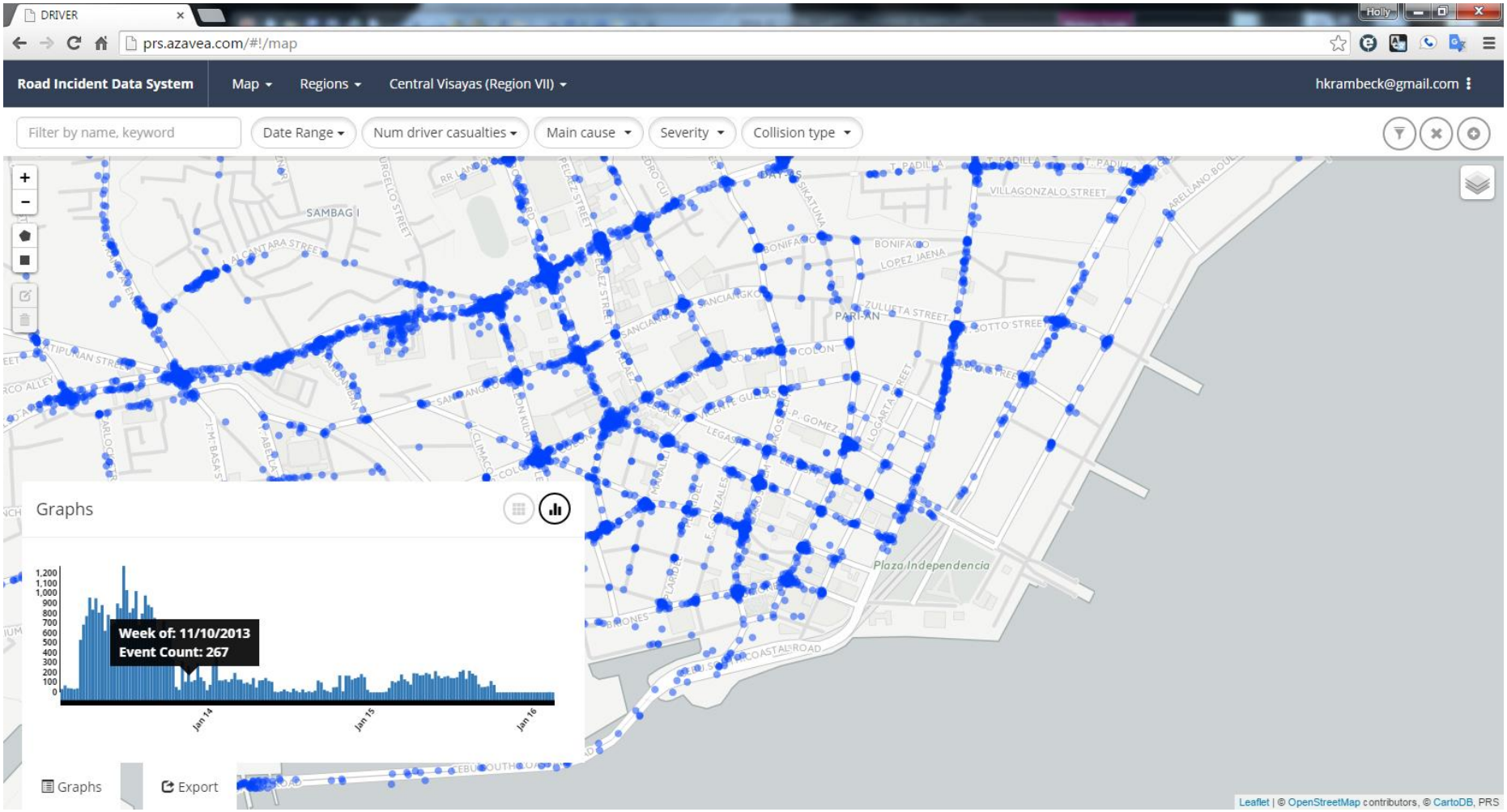

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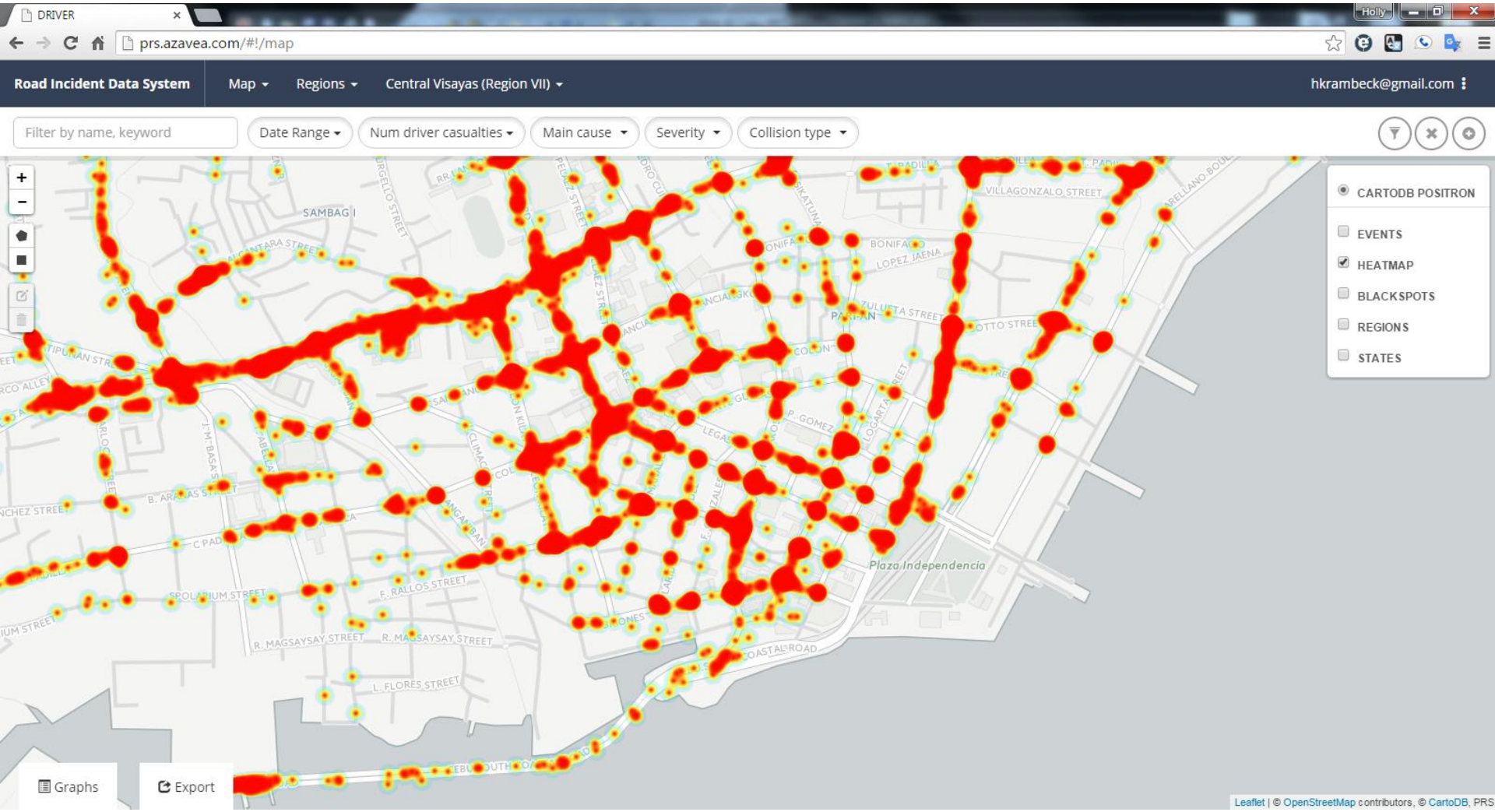

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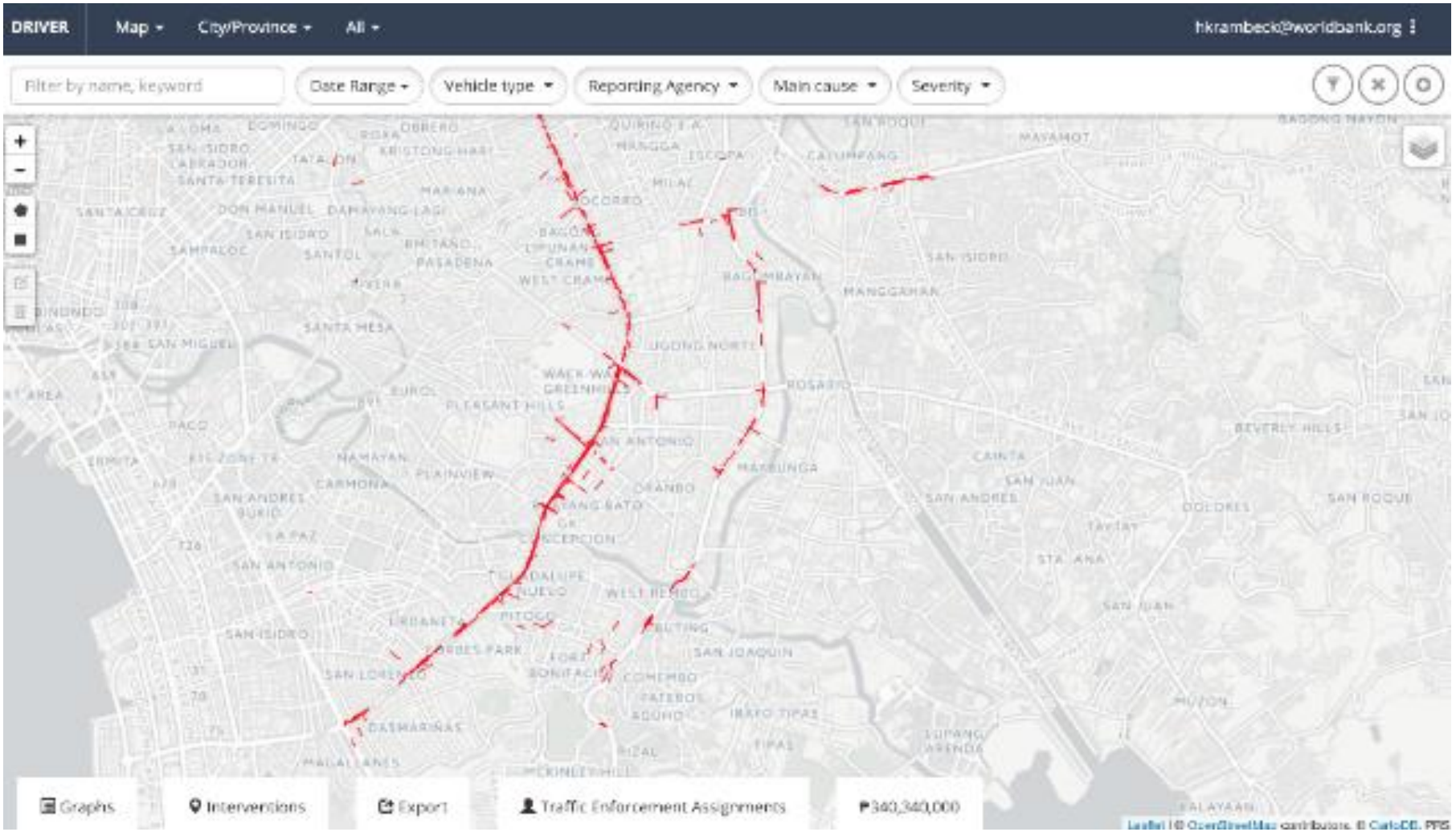

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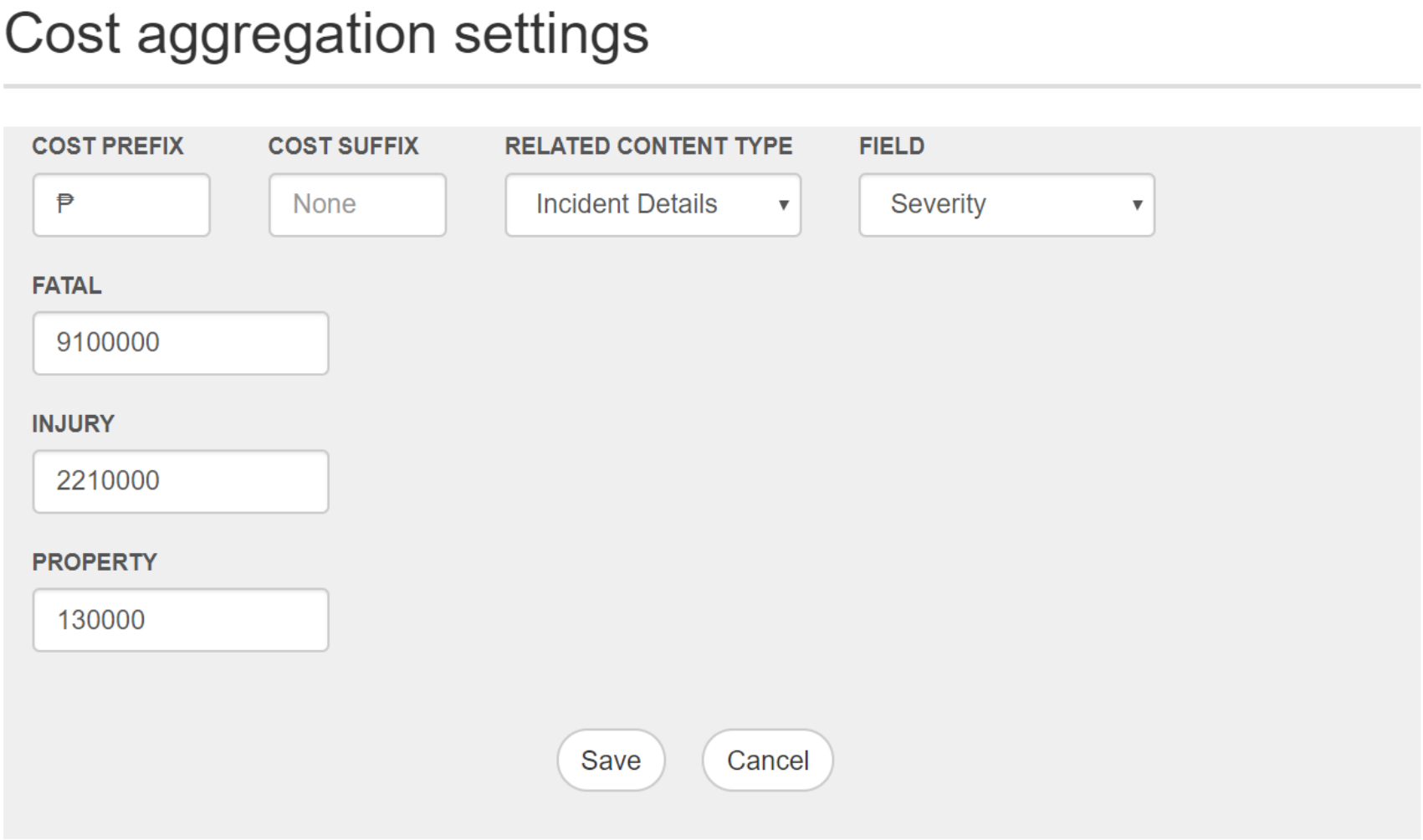

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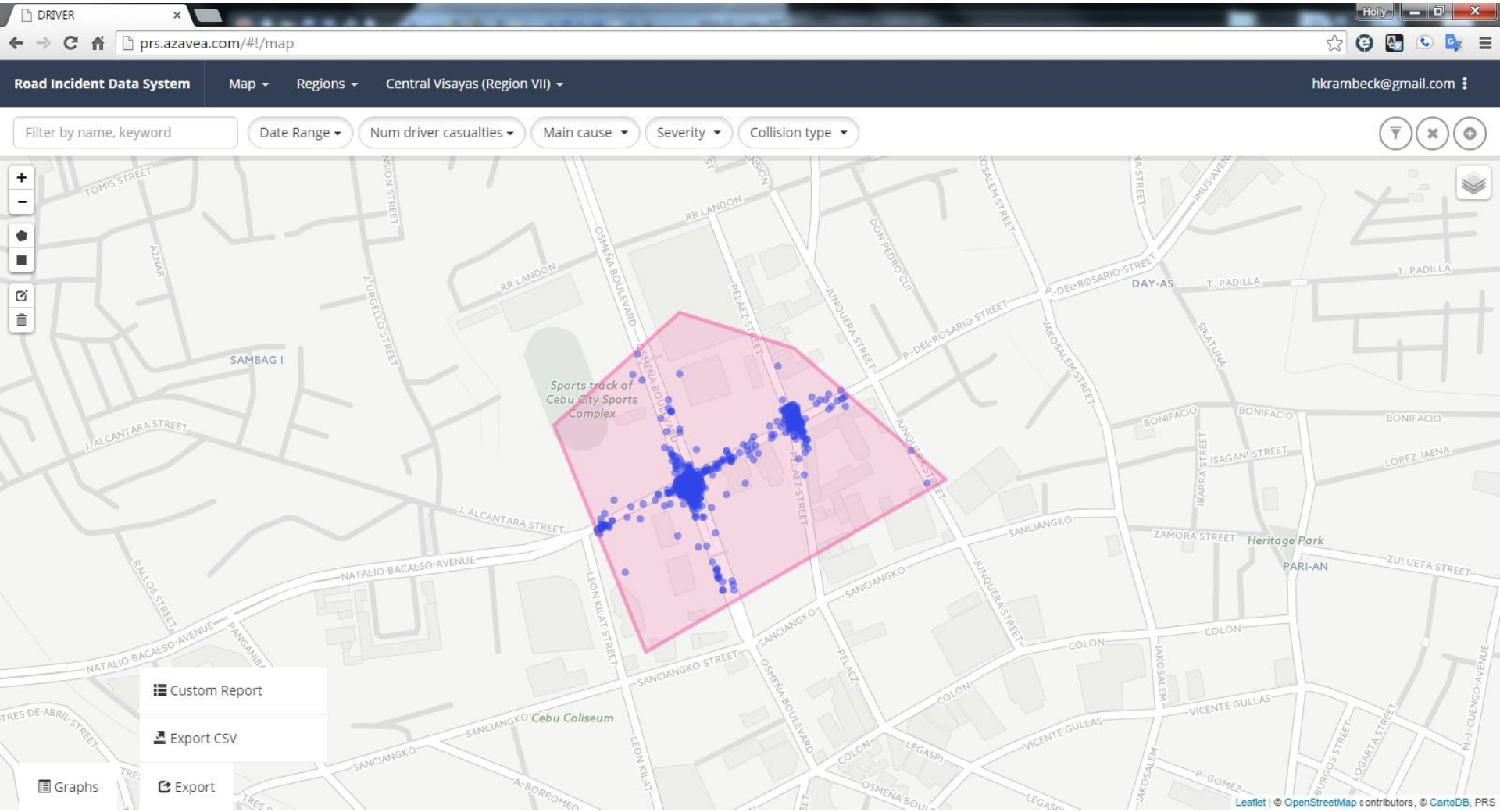

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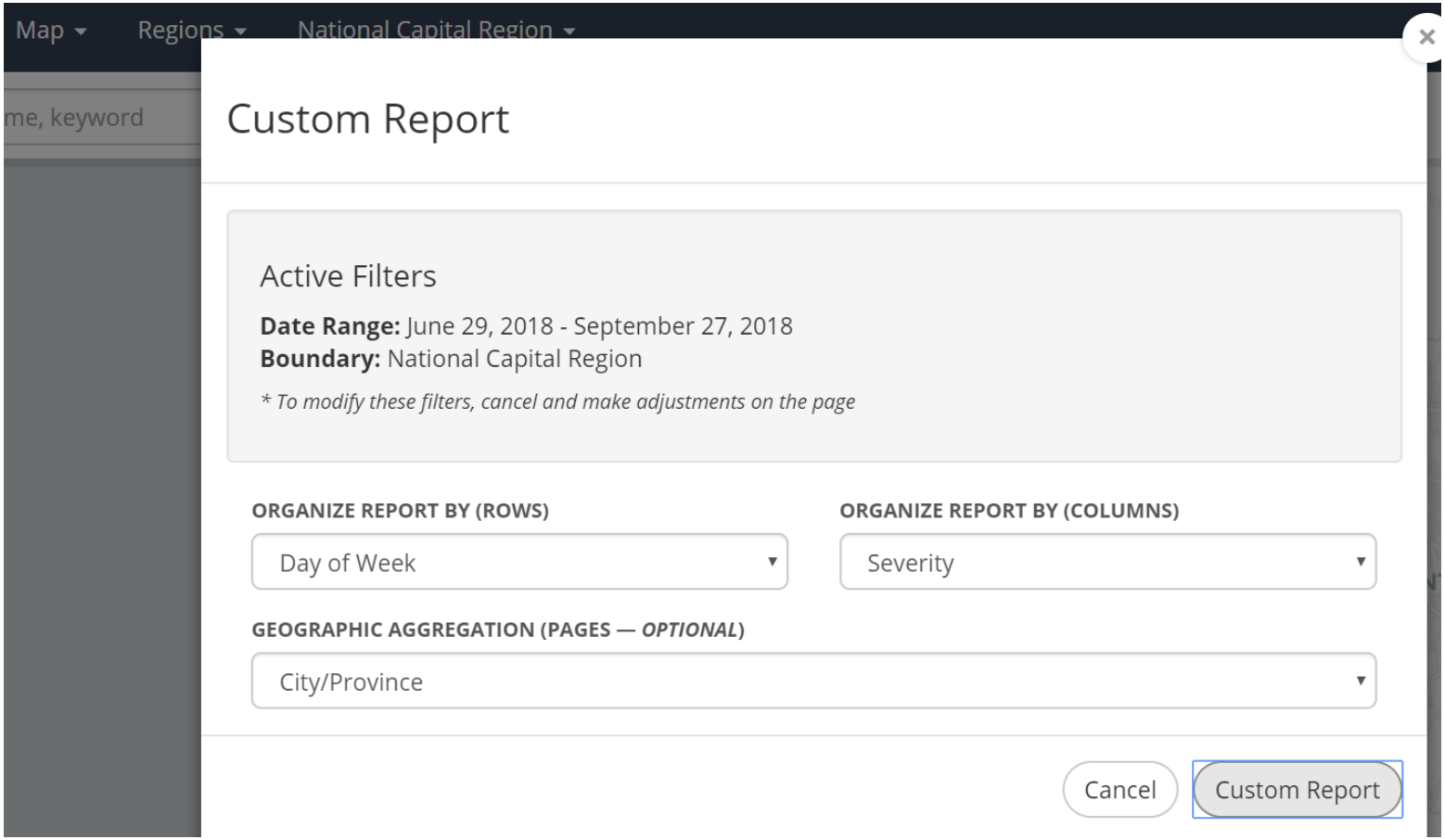
REPORTES



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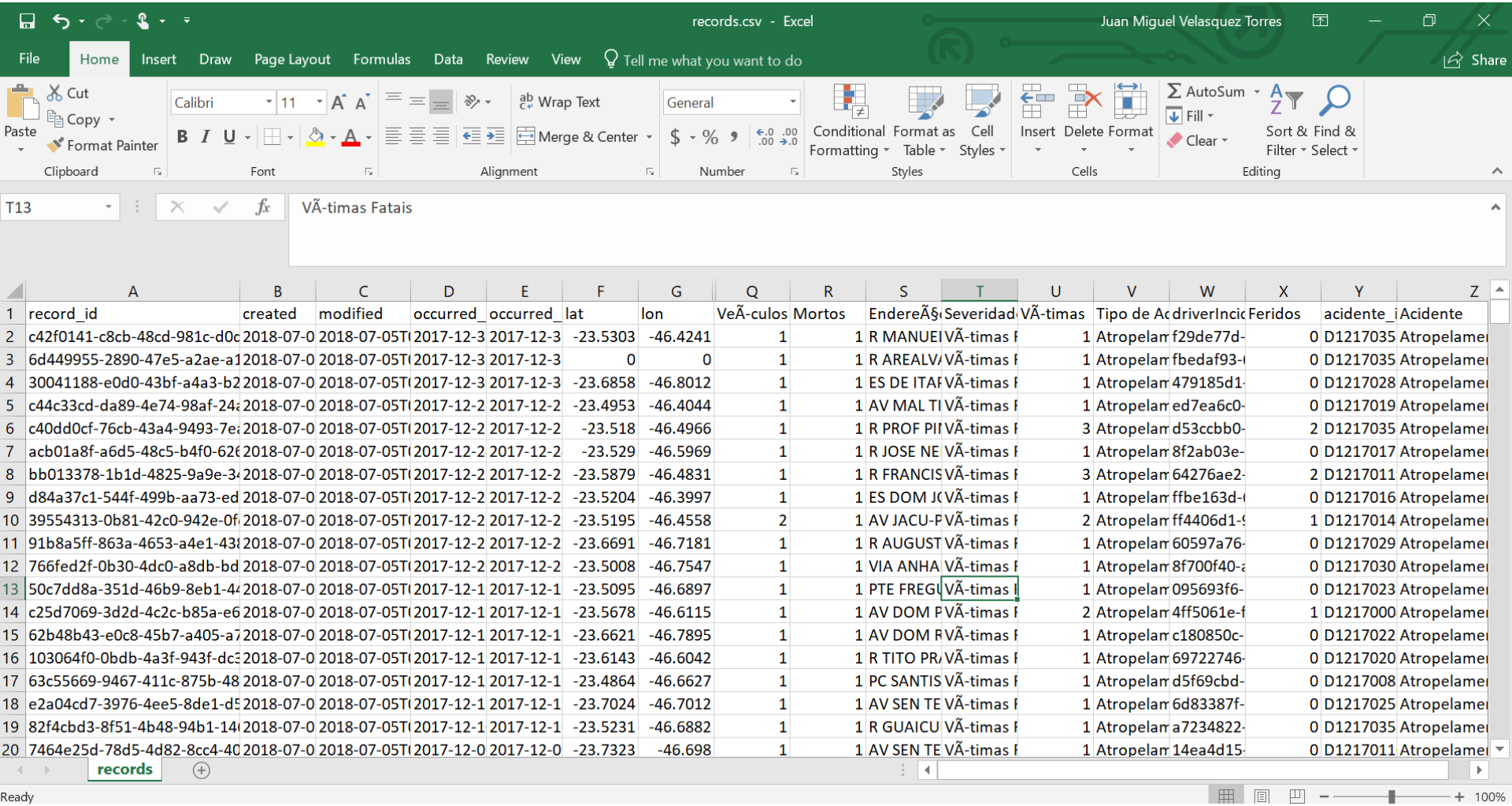
REPORTES

January 1, 2018 - September 27, 2018

Incidents by Day of Week and Severity

DAY OF WEEK	FATAL	INJURY	PROPERTY	TOTAL
Sunday	15	232	395	642
Monday	23	229	1020	1272
Tueday	25	225	1282	1532
Wednesday	17	215	1273	1505
Thursday	25	214	1233	1472
Friday	13	198	1265	1476
Saturday	23	192	899	1114

REPORTES



	A	B	C	D	E	F	G	Q	R	S	T	U	V	W	X	Y	Z
1	record_id	created	modified	occurred_	occurred_	lat	lon	VeÃ-culos	Mortos	EndereÃ§	Severidad	VÃ-timas	Tipo de Ac	driverInci	Feridos	acidente_i	Acidente
2	c42f0141-c8cb-48cd-981c-d0c	2018-07-0	2018-07-05T	2017-12-3	2017-12-3	-23.5303	-46.4241	1	1	R MANUEI	VÃ-timas F	1	Atropelam	f29de77d-	0	D1217035	Atropelame
3	6d449955-2890-47e5-a2ae-a1	2018-07-0	2018-07-05T	2017-12-3	2017-12-3	0	0	1	1	R AREALV/	VÃ-timas F	1	Atropelam	fbedaf93-(	0	D1217035	Atropelame
4	30041188-e0d0-43bf-a4a3-b2	2018-07-0	2018-07-05T	2017-12-3	2017-12-3	-23.6858	-46.8012	1	1	ES DE ITAI	VÃ-timas F	1	Atropelam	479185d1-	0	D1217028	Atropelame
5	c44c33cd-da89-4e74-98af-24	2018-07-0	2018-07-05T	2017-12-2	2017-12-2	-23.4953	-46.4044	1	1	AV MAL TI	VÃ-timas F	1	Atropelam	ed7ea6c0-	0	D1217019	Atropelame
6	c40dd0cf-76cb-43a4-9493-7e	2018-07-0	2018-07-05T	2017-12-2	2017-12-2	-23.518	-46.4966	1	1	R PROF PII	VÃ-timas F	3	Atropelam	d53ccbb0-	2	D1217035	Atropelame
7	acb01a8f-a6d5-48c5-b4f0-626	2018-07-0	2018-07-05T	2017-12-2	2017-12-2	-23.529	-46.5969	1	1	R JOSE NE	VÃ-timas F	1	Atropelam	8f2ab03e-	0	D1217017	Atropelame
8	bb013378-1b1d-4825-9a9e-3	2018-07-0	2018-07-05T	2017-12-2	2017-12-2	-23.5879	-46.4831	1	1	R FRANCIS	VÃ-timas F	3	Atropelam	64276ae2-	2	D1217011	Atropelame
9	d84a37c1-544f-499b-aa73-ed	2018-07-0	2018-07-05T	2017-12-2	2017-12-2	-23.5204	-46.3997	1	1	ES DOM JC	VÃ-timas F	1	Atropelam	ffbe163d-(	0	D1217016	Atropelame
10	39554313-0b81-42c0-942e-0f	2018-07-0	2018-07-05T	2017-12-2	2017-12-2	-23.5195	-46.4558	2	1	AV JACU-P	VÃ-timas F	2	Atropelam	ff4406d1-9	1	D1217014	Atropelame
11	91b8a5ff-863a-4653-a4e1-43	2018-07-0	2018-07-05T	2017-12-2	2017-12-2	-23.6691	-46.7181	1	1	R AUGUST	VÃ-timas F	1	Atropelam	60597a76-	0	D1217029	Atropelame
12	766fed2f-0b30-4dc0-a8db-bd	2018-07-0	2018-07-05T	2017-12-2	2017-12-2	-23.5008	-46.7547	1	1	VIA ANHA	VÃ-timas F	1	Atropelam	8f700f40-a	0	D1217030	Atropelame
13	50c7dd8a-351d-46b9-8eb1-4	2018-07-0	2018-07-05T	2017-12-1	2017-12-1	-23.5095	-46.6897	1	1	PTE FREGU	VÃ-timas F	1	Atropelam	095693f6-	0	D1217023	Atropelame
14	c25d7069-3d2d-4c2c-b85a-e6	2018-07-0	2018-07-05T	2017-12-1	2017-12-1	-23.5678	-46.6115	1	1	AV DOM P	VÃ-timas F	2	Atropelam	4ff5061e-f	1	D1217000	Atropelame
15	62b48b43-e0c8-45b7-a405-a7	2018-07-0	2018-07-05T	2017-12-1	2017-12-1	-23.6621	-46.7895	1	1	AV DOM R	VÃ-timas F	1	Atropelam	c180850c-	0	D1217022	Atropelame
16	103064f0-0bdb-4a3f-943f-dc3	2018-07-0	2018-07-05T	2017-12-1	2017-12-1	-23.6143	-46.6042	1	1	R TITO PR/	VÃ-timas F	1	Atropelam	69722746-	0	D1217020	Atropelame
17	63c55669-9467-411c-875b-48	2018-07-0	2018-07-05T	2017-12-1	2017-12-1	-23.4864	-46.6627	1	1	PC SANTIS	VÃ-timas F	1	Atropelam	d5f69cbd-	0	D1217008	Atropelame
18	e2a04cd7-3976-4ee5-8de1-d5	2018-07-0	2018-07-05T	2017-12-1	2017-12-1	-23.7024	-46.7012	1	1	AV SEN TE	VÃ-timas F	1	Atropelam	6d83387f-	0	D1217025	Atropelame
19	82f4cbd3-8f51-4b48-94b1-14	2018-07-0	2018-07-05T	2017-12-1	2017-12-1	-23.5231	-46.6882	1	1	R GUAICU	VÃ-timas F	1	Atropelam	a7234822-	0	D1217035	Atropelame
20	7464e25d-78d5-4d82-8cc4-40	2018-07-0	2018-07-05T	2017-12-0	2017-12-0	-23.7323	-46.698	1	1	AV SEN TE	VÃ-timas F	1	Atropelam	14ea4d15-	0	D1217011	Atropelame

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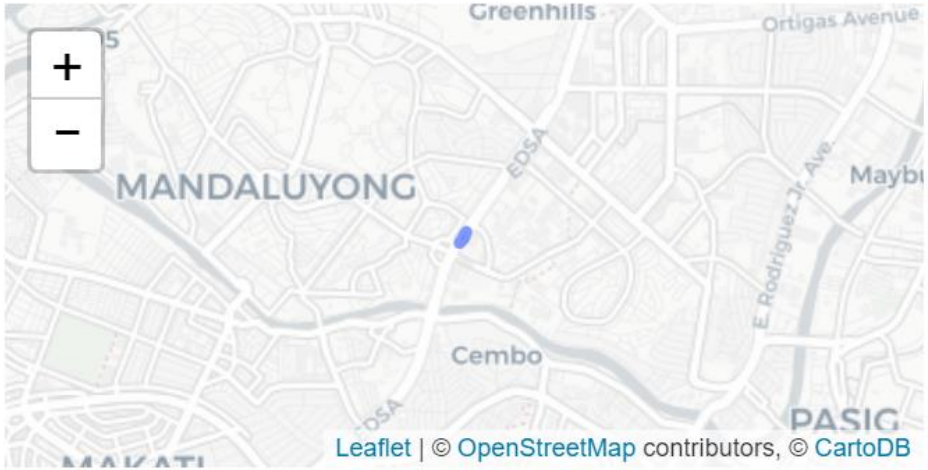
REPORTES

Traffic Enforcement Assignments

Print

September 28, 2018, 0:00–September 28, 2018, 3:00

10 TRAFFIC ENFORCER ASSIGNMENTS FOR NATIONAL CAPITAL REGION



Assignment:	**Assignment 1**
Location:	**14.574, 121.048**
Notes:	

Recomendación de ubicaciones a partir de estadísticas de hora del día, día de la semana y semana en el año.

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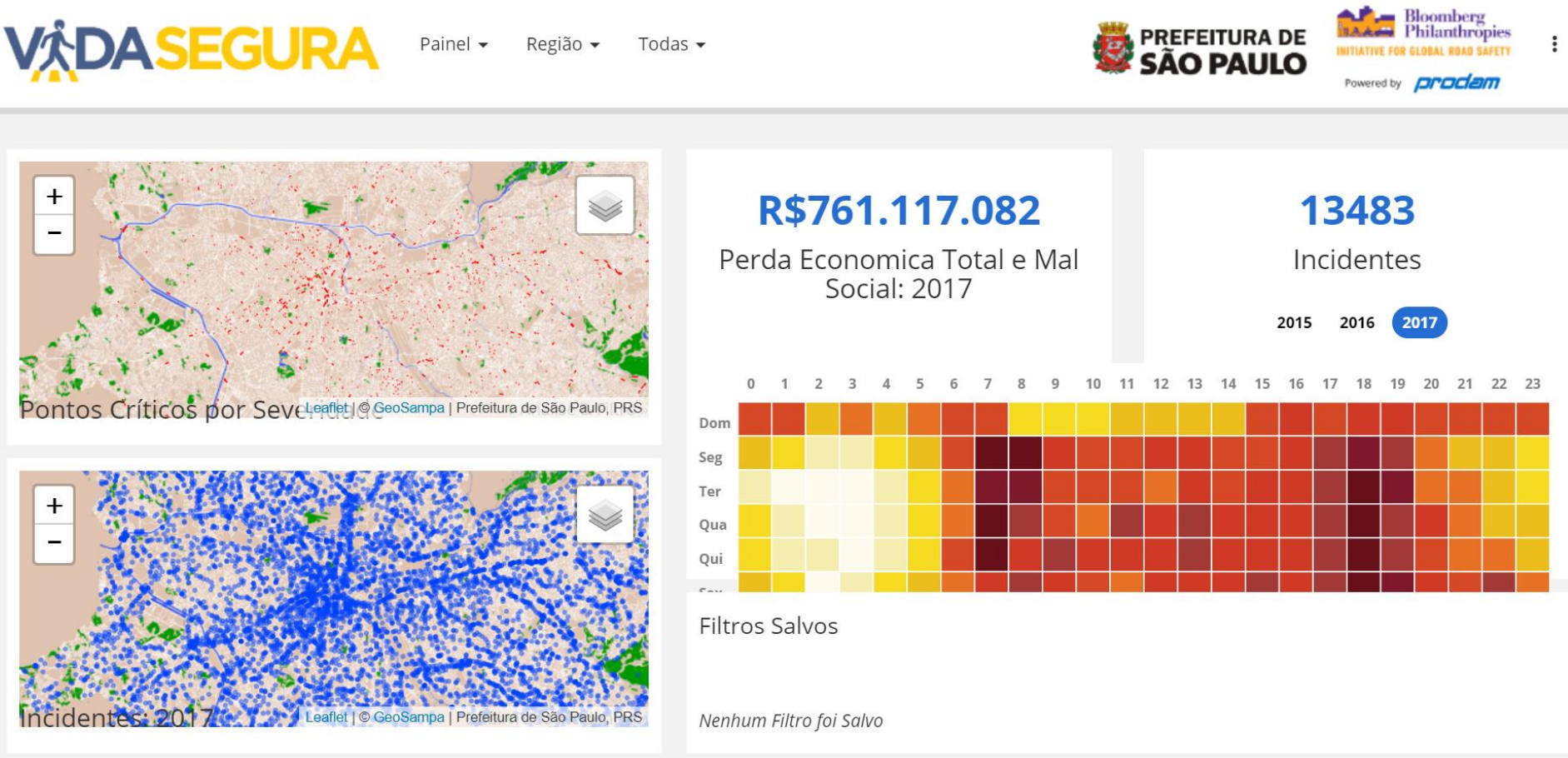
PLATAFORMA PÚBLICA



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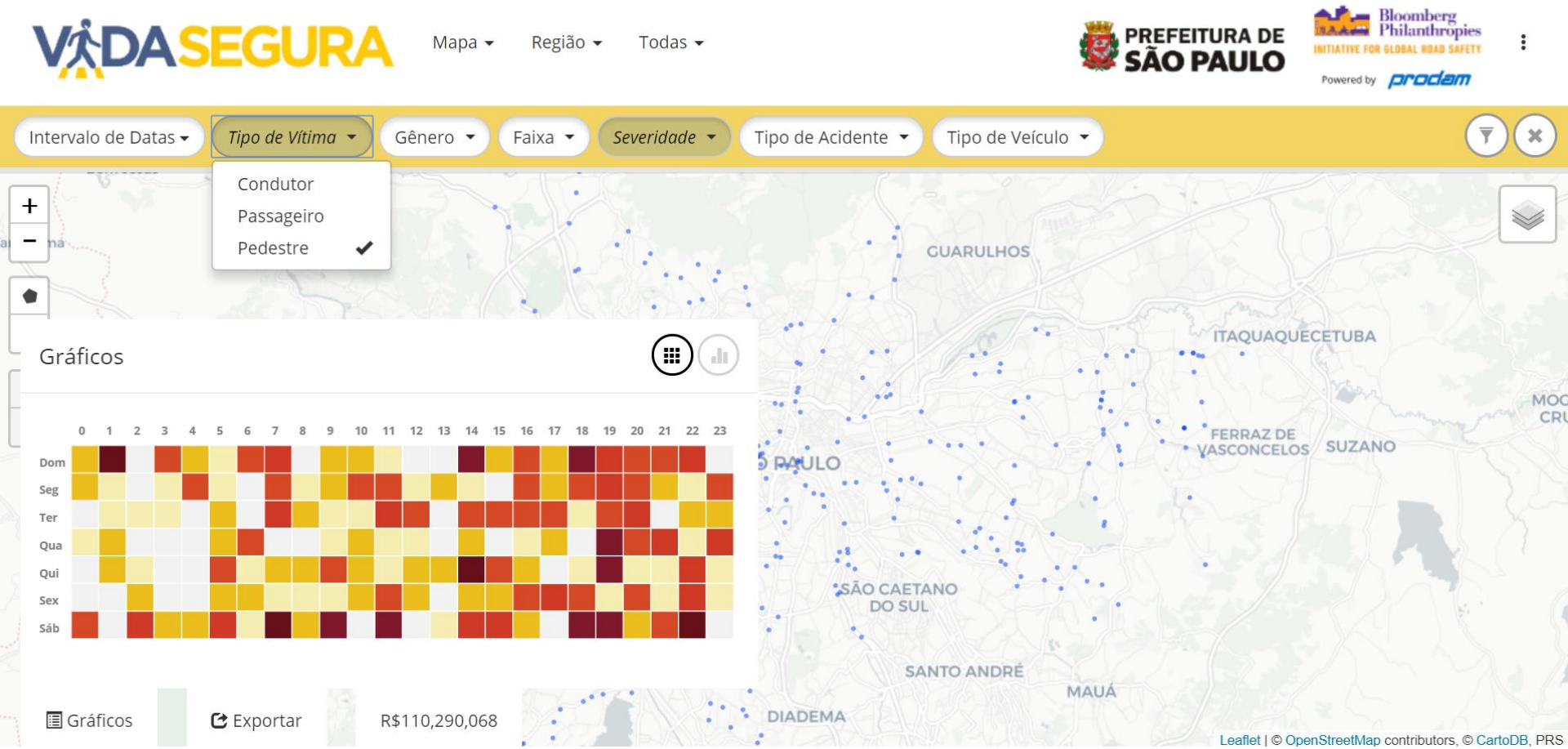
PLATAFORMA PÚBLICA



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PROCESO DE IMPLEMENTACIÓN

Comité de Vías

Responsible por política y financiación de seguridad vial.

Departamento de Transporte

Implementa la política nacional de seguridad vial

Generadores de Datos

- Policía Nacional de Filipinas
- Agencias de Mantenimiento Vial
- Departmento de Salud

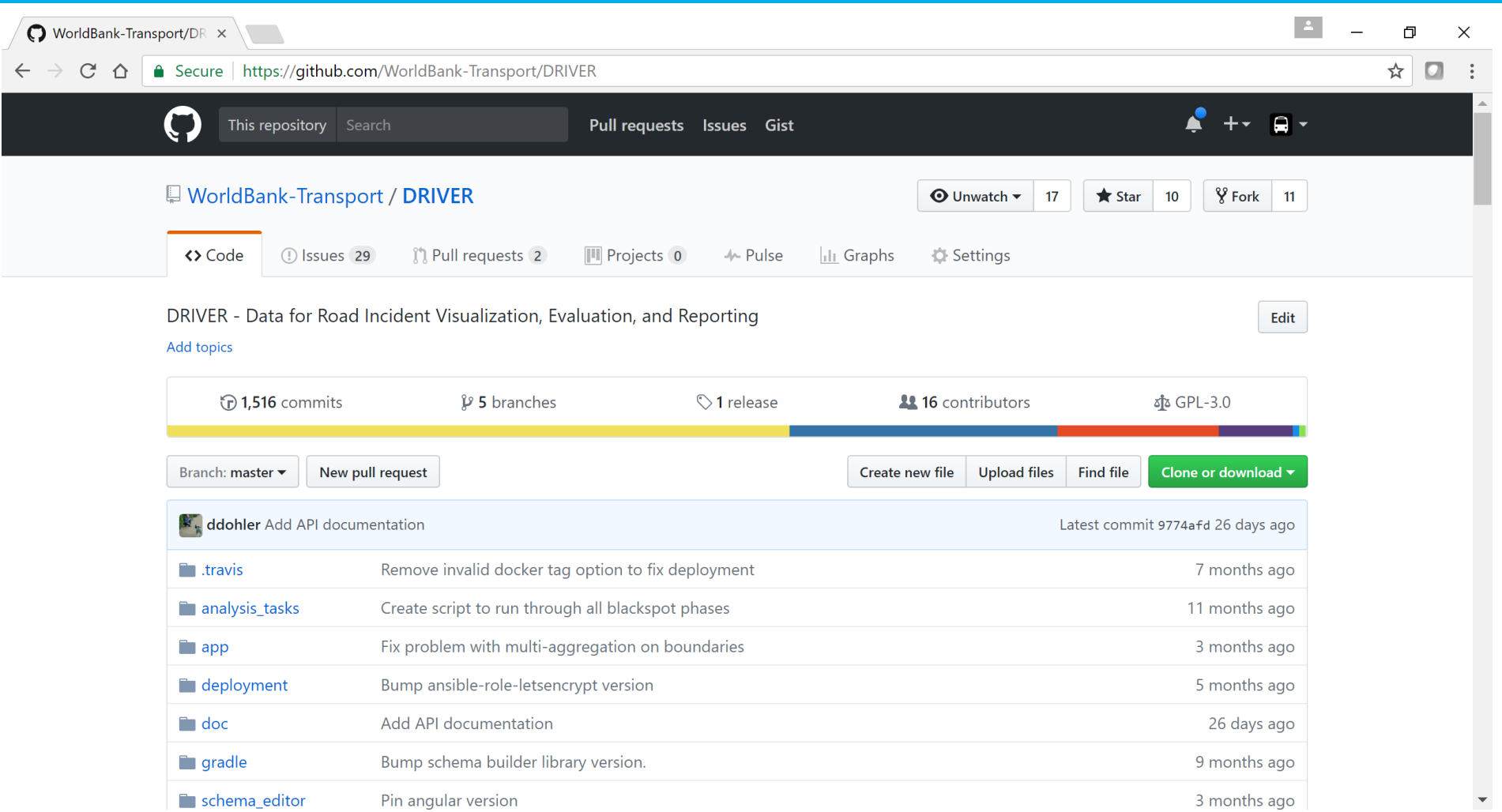
Usuarios de Datos

- Autoridad Vial
- Unidades de Planeación e Ingeniería
- Superintendencia de Transporte

Apoyo

- Departamento de Ciencia y Tecnología

PROCESO DE IMPLEMENTACIÓN



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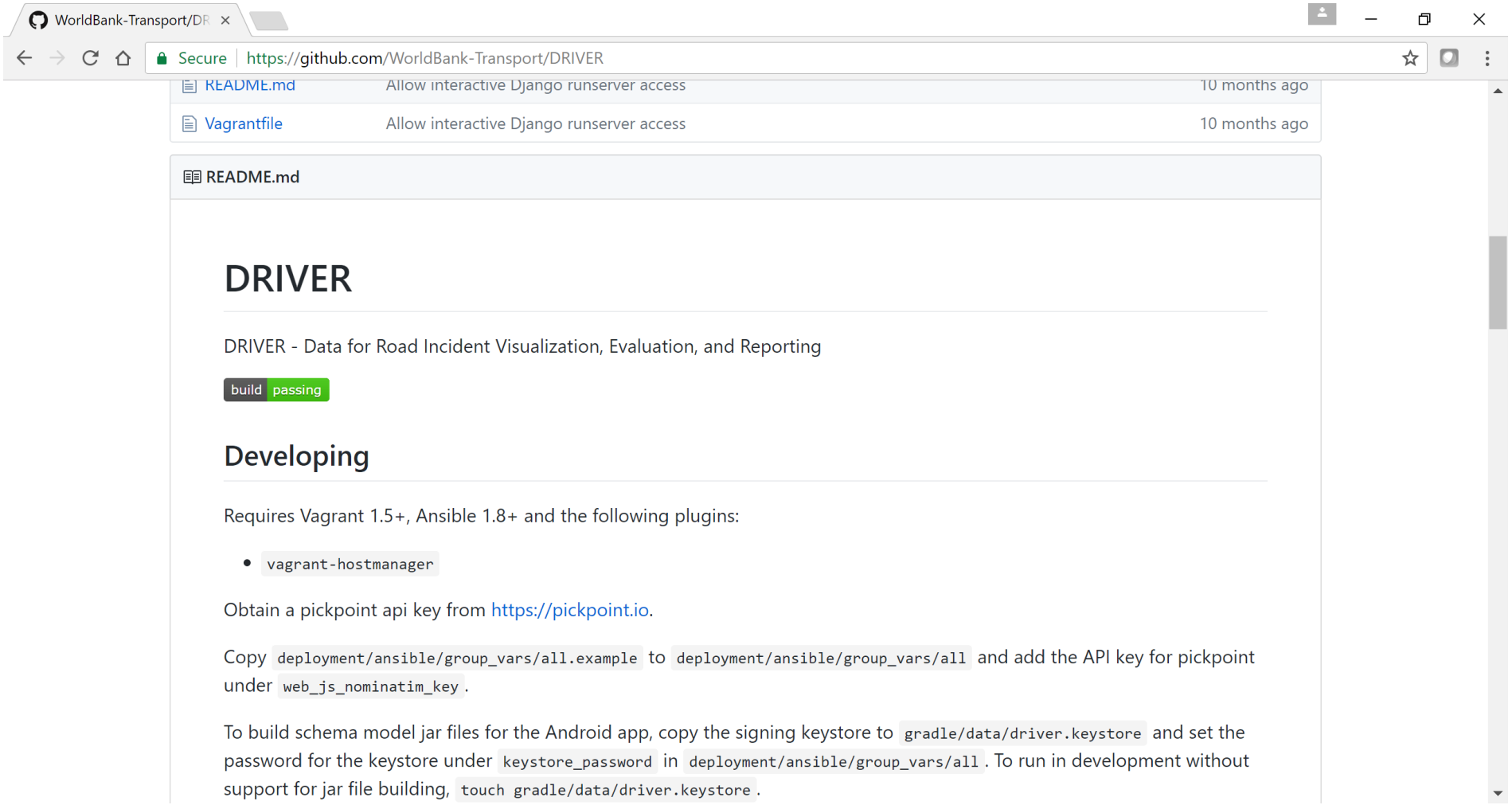
PROCESO DE IMPLEMENTACIÓN



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PROCESO DE IMPLEMENTACIÓN

Development

This section describes the competencies for a DRIVER developer.

Core competencies

- Proficient in a Linux environment, including shell scripting
- Knowledge of infrastructure tooling such as Vagrant, Ansible, and Docker
- Web development experience, specifically Python/Django and Javascript/Angular, including knowledge of HTML/CSS
- Experience with a relational database system

Preferred competencies

- Experience with:
  - PostgreSQL
  - Redis
  - Nginx
  - Gunicorn
  - Celery
- GIS experience, specifically using Windshaft
- Knowledge of statistics and R
- Knowledge of these additional technologies is also beneficial:
  - NFS
  - OAuth2
  - Javascript package/build tools (Grunt and Bower)
  - Monit
  - ufw

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PROCESO DE IMPLEMENTACIÓN

Deployment/Maintenance

This section describes the competencies for DRIVER operations/maintenance.

Core competencies

- Comfortable running commands in the terminal in a Unix-like environment
- Configuring remote servers
- Experience with firewall configuration, logging, and certificates
- Ability to troubleshoot
- Basic knowledge of networking/DNS
- Knowledge of Ansible and Docker

Preferred competencies

- Experience writing shell scripts
- Knowledge of:
  - Django
  - PostgreSQL
  - Nginx
  - Redis
  - Gunicorn
  - Celery
  - Gradle
  - Windshaft
  - Monit
  - ufw
- Knowledge of a cloud computing platform such as AWS
- Specific services such as:
  - EC2
  - S3
  - CloudFormation

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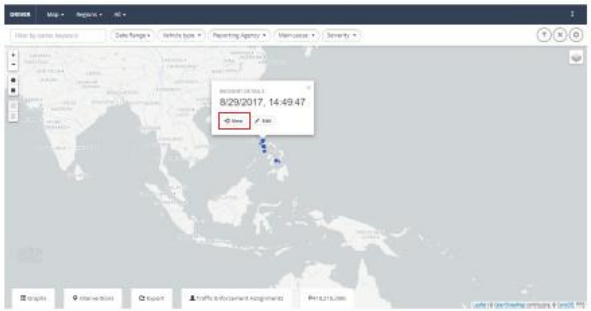
PROCESO DE IMPLEMENTACIÓN

EDITING AND DELETING INCIDENTS

Analysts may also edit incidents already recorded in DRIVER. To edit an incident, go to the Map first, then click an individual incident you wish to edit by selecting one of the blue location pins.

Once selected, a pop up will appear that will prompt you to either view or edit an incident. Click "Edit".



The Incident Input form will appear again. You may edit details of the incident from here, and also delete them.

To save edited data, click the "Save Incident" button on the right.

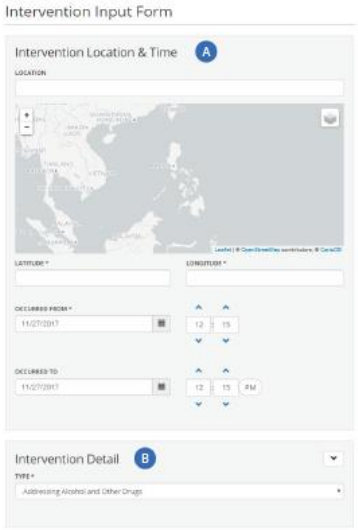
To delete an incident, the click "Delete Incident" button on the right.

ENCODING INTERVENTIONS

Interventions are actions made by Analaysts in order to alleviate a road incident. These may come in the form of disciplinary action, road safety precautions, etc.

To access add an Intervention, analysts must first go to the Map and click the "Intervention" tab found below.

Clicking on this will prompt the "Add Intervention" button to appear. Click this.



(A) **Intervention Location & Time**
Record location, time, etc. where the intervention took/ will take place.

(B) **Intervention Detail**
The details and the action taken by officials to alleviate the road incident

Editing & Deleting Interventions
Just like editing incidents, click on a pinned intervention on the map. This will show an "Edit" button. You may edit and delete interventions in the same way.

DRIVER
USER MANUAL
www.roadsafety.gov.ph

DRIVER is a web application aimed at improving road safety reporting and data analysis. It provides data entry tools, map interfaces, custom report and filter tools, multiple concurrent user editing, and data exports.

CONTACT US

DRIVER **0917-123-4567**
Email: **driver@driver.ph**

View the full DRIVER manual on
www.roadsafety.ph

Visit DRIVER on
www.roadsafety.gov.ph

DRIVER

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PROCESO DE IMPLEMENTACIÓN

USER TYPES & ROLES

Public Viewers are allowed to view basic incident data only.

Analysts are able to input, view, edit, export and delete records and data, and have access to all event information.

Administrators have login capability to the database design editor software and can modify the structure of DRIVER's database.

LOGGING IN TO DRIVER

(1) Go to http://roadsafety.gov.ph and log in to access DRIVER

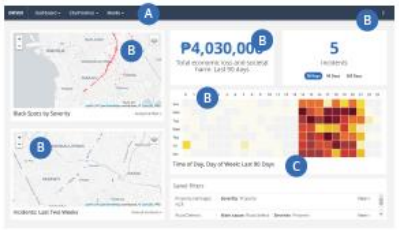
(2) Log in via your Google account or enter a DRIVER username and password

DRIVER DASHBOARD

After logging in, you will be redirected to the Dashboard. This is the default view of the DRIVER site. From the Dashboard, you can:

Display information highlights	Filter information by region, city, or province	Access to more detailed information

Parts of the Dashboard



(A) **Header**
Access map, record list, & regional filters

(B) **Dashboard Widgets**
Summary of road incidents

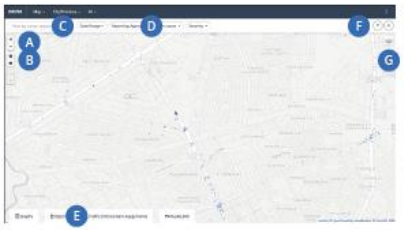
(C) **Saved Filters**
Filters widgets, which change depending on set filter

VIEWING DATA

All DRIVER users may view data on road incidents and interventions. This data can be accessed via (1) the Map, or (2) the Record List.

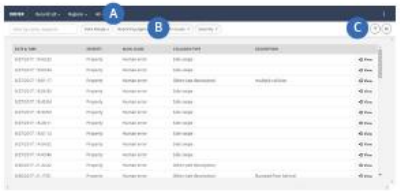
(1) **Map** - Shows the location of each road incident in blue location pins. Details of individual incidents are viewed by clicking on a pin. Analysts may add, filter, and edit records from the map.

(B) Drawing Tools let you draw on an area of the map to filter specific details of incidents. (D) Map Filters let you filter location pins by date range, main cause, etc. (G) Layers filter data according to geographic layers. The (F) Add Record, Saved Filters, Clear Filters buttons add data and access filter tools. (A) Zoom In & Out buttons magnify on specific areas of the map to view more details.



(A) **Zoom In & Out**
(B) **Drawing Tools**
(C) **Search**
(D) **Map Filters**
(E) **Other Tools**
(F) **Add Record, Saved Filters, Clear Filters**
(G) **Layers**

(2) **Record List** - Tabular view of all incidents recorded on DRIVER, split into categories. Analysts may also add, filter, edit, and delete records from here.



(A) **Header**
Access the Map, Record List, & Regional Filters

(B) **Record List Filters**
Filter incidents by date range, main cause, etc.

(C) **Saved Filters, Clear Filters**

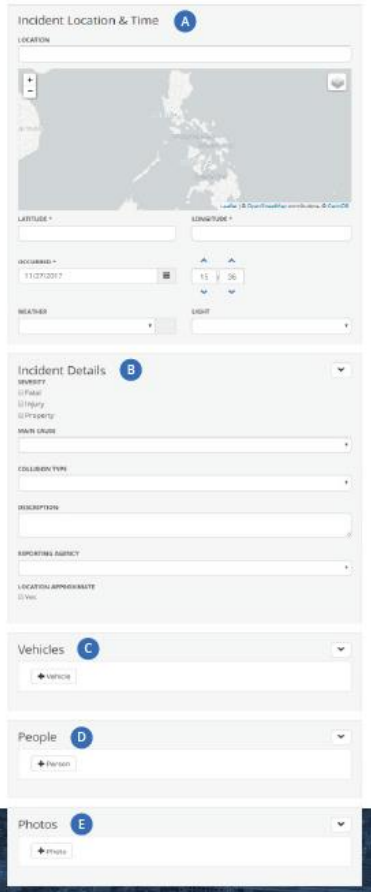
Exporting Data from Map
Data may be exported into a CSV file by clicking this tab at the bottom of the Map.

ENCODING INCIDENTS

Clicking on the "Add Record" button from the Map leads you to the Incident Input Form. Add details of each recorded road incident here.

This is the "Add Record" button, accessible on the top right corner of the Map

Incident Input Form



(A) **Incident Location & Time**
Record location, time, weather, light, etc. during the incident

(B) **Incident Details**
Record the severity of the crash, main cause, type of collision, etc.

(C) **Vehicles**
Add 1 or more vehicles & vehicle details involved in the incident.

(D) **People**
Add persons involved in the incident

(E) **Photos**
Upload photos of the incident (if any)

To save, click "Save Incident". To cancel editing, click "Cancel". Both buttons are found on the right side of the Incident Input Form.

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¡Gracias!

Veronica I. Raffo

vraffo@worldbank.org

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