

MMARAS

Metro Manila Accident Recording and Analysis System

**Annual Report
January to December 2005**

Produced by the Road Safety Unit
Traffic Operations Center – Traffic Engineering Center
Metropolitan Manila Development Authority (MMDA)

Introduction

The Metro Manila Accident Reporting and Analysis System (MMARAS) is operated by the Road Safety Unit (RSU) of the MMDA Traffic Operations Center (TOC) – Traffic Engineering Center (TEC), with the cooperation and assistance of the Traffic Enforcement Group (TEG) of the National Capital Region Police Office (NCRPO) Philippine National Police (PNP). The MMARAS was inaugurated on 01 June 2002.

The objective is to compile an ongoing database of all traffic accidents that occurred in Metropolitan Manila, these includes fatal, non-fatal and damage to property incidences, which can indicate areas where safety improvements need to be made. The system will also allow the impact of improvement measures to be monitored.

This report is intended to be an annual analysis of 'fatal, non-fatal and damage to property 'incidents that have been recorded by the PNP traffic accident investigators for the year 2005. The information is presented in graphical and tabular form, which provides a readily identifiable pattern of accident locations and causation patterns. Monthly and Annual comparisons of traffic accident data statistics are included in this report.

The personnel of the Road Safety Unit gathered traffic accident data from different traffic offices and stations of the Traffic Enforcement Group (TEG-NCRPO) within Metro Manila. The significance of this practice is that burdens of the traffic accident investigators in documenting every accident were minimize and most of the accidents can now be gather including those minor incidents. In so doing, we can now visualize the situation of the accident patterns how safe or bad our road is. Having increased the data, it gives additional information in analyzing the causes of accident.

The assistance and cooperation of the traffic investigators will be necessary to maintain an accurate record of the facts surrounding every traffic accident within Metro Manila, since a truly significant picture will only develop over time. The work of the Road Safety Unit will be crucial in providing an appropriate directional thrust in the fight to make the roads of Metro Manila a safer place for everyone.

The Metropolitan Road Safety Unit can be contacted for further information or assistance on Tel: 882-4151-77 loc. 319

Compilation of January to December Reports for the Year 2005

Data Sources

Three data sources are available to the MRSU:

- Individual report forms for each accident, gathered by Data Researchers Group of the RSU from different stations and district offices of the Traffic Enforcement Group; and
- Clippings of road traffic accident from different newspapers and tabloids that is available at the Public Information Office (PIO) of the MMDA; and
- Traffic Accident Reports gathered by the MMDA Metro Base thru caller and monitoring unit from different enforcers assigned in the field.

We cut-off clippings of road traffic accident from different newspapers and tabloids for compilation of the same and reference for under reported incidences, while traffic accident reports gathered by MMDA Metro Base are also references for under reported incidences especially those amicably settled incidents without police and court intervention and treated as an additional data. However, only the first are entered into MMARAS, and only these provide the basis for the statistics presented in this report.

Overall statistics

Table 1. Shows the number of road accident reports gathered and compiled from January to December 2005, classified by month.

Month	Fatal	Non Fatal Injury	Damage	Grand Total
January	40	943	4625	5,608
February	30	980	4492	5,502
March	36	849	4364	5,249
April	25	916	4425	5,366
May	25	825	4565	5,415
June	25	840	4509	5,374
July	27	938	4550	5,515
August	23	860	4684	5,567
September	19	841	4539	5,399
October	20	986	4535	5,541
November	21	866	4178	5,065
December	33	1026	4451	5,510
Grand Total	324	10,870	53,917	65,111

Table 2. In terms of the number of road accidents involved, by district and accident severity, this translates to:

District	Fatal	Non Fatal Injury	Damage	Grand Total
Central	109	3529	17367	21,005
Eastern	37	2148	10714	12,899
Northern	46	1325	3802	5,173
Southern	82	3282	18071	21,435
Western	50	586	3963	4,599
Grand Total	324	10,870	53,917	65,111

Table 3. Below indicates the distribution of road accidents by cities and municipalities in Metro Manila from January – December 2005.

City / Municipality	Fatal	Non Fatal Injury	Damage	Grand Total
Caloocan	23	731	2309	3,063
Las Piñas	6	573	2818	3,397
Makati	12	927	6760	7,699
Malabon	5	189	414	608
Mandaluyong	3	424	2997	3,424
Manila	50	586	3963	4,599
Marikina	14	805	2000	2,819
Muntinlupa	8	403	2297	2,708
Navotas	3	73	261	337
Parañaque	27	501	2385	2,913
Pasay	7	259	2387	2,653
Pasig	19	819	4360	5,198
Pateros	1	55	111	167
Quezon	109	3529	17367	21,005
San Juan	1	100	1357	1,458
Taguig	21	564	1313	1,898
Valenzuela	15	332	818	1,165
Grand Total	324	10,870	53,917	65,111

On table no. 3, the municipality of Pateros has the lowest number of incidences for year 2005 (from January to December) followed by San Juan, in terms of fatality. While in terms of injury, Pateros once again tops the line followed by Navotas. We can now consider these LGU's to be the safest in Metro Manila, in terms of road traffic accident is concerned. Since they have lesser-recorded fatal and non-fatal incidences in the MMARAS database up to this date. This maybe attributed to the following:

- Small land area within the NCR,
- No major arterial road compared to other cities,
- Not considered as Central Business Districts (CBD's),
- Minimal road accidents, and/or
- Manageable traffic direction and control.

On the other hand, the City of Quezon dominates all the cities and municipalities of Metro Manila in terms of road traffic accident followed by City of Manila, in terms of fatality. In terms of injury, Quezon City again dominates followed by the City of Makati. This is because of the following factors:

- Central Business Districts (CBD's) with high social and economic activity.
- Biggest land area amongst the cities in Metro Manila.
- It is noted that 6 out of the 7 major thoroughfares such as EDSA, C-5 Road, Commonwealth Ave., Radial Road 10, Quezon Ave. and Roxas Blvd. are located within these cities.

However, problems on road traffic accident in Quezon City would be given much preferences by this agency in conducting road safety because it is has the largest land area (of about 166.2 sq. km.) by providing remedial measures on the "blackspots" or accident-prone areas of this city. On this process, traffic accident might be reducing in the future.

Known deficiencies

Given the complex mechanism for collecting road accident data in Metro Manila, and the relatively large number of Traffic Accident Investigators involved, it is inevitable that there will be some data that is missed from the database and these are those under reported incidences. At the present time, however, there is no firm evidence that large numbers of accidents are being omitted.

The reason why the concept of collecting traffic accident data is revised by this office by tasking the personnel's of the Road Safety Unit (data researchers group) to gather and copy all those traffic accidents that happened in Metro Manila through the available records of every traffic stations instead of letting the Traffic Accident Investigator make their own traffic accident report. This new concept increases the statistics of collected traffic accident.

Data Analysis

Types of person involved:

The following tables give a breakdown of the number of persons involved in road accidents during the past year, categorized by:

- Drivers : person driving a mechanically propelled vehicle or riding Pedal cycle.
- Passengers : anyone carried-in or on a mechanically propelled vehicle.
- Pedestrians : anyone traveling on foot.

Fatalities

District	Drivers Killed	Passengers Killed	Pedestrians Killed	Total Killed
Central	33	22	63	118
Eastern	18	4	16	38
Northern	19	14	23	56
Southern	31	9	44	84
Western	14	7	31	52
Total	115	56	177	348

Injuries

District	Drivers Injured	Passengers Injured	Pedestrians Injured	Total Injured
Central	1,506	1,830	1,414	4,750
Northern	1,030	879	693	2,602
Eastern	546	631	645	1,822
Southern	1,255	1,257	1,543	4,055
Western	258	344	202	804
Total	4,595	4,941	4,497	14,033

The relatively high proportion of drivers, passengers and pedestrians killed and injured is still a cause for concern.

Breakdown by time of day

The following table represents the frequency of incidents by time of day.

Time Hour	Fatal	Non Fatal Injury	Damage	Grand Total
0	8	144	659	811
1	20	271	813	1104
2	25	261	774	1060
3	16	264	732	1012
4	14	248	788	1050
5	10	310	959	1279
6	8	391	1392	1791
7	8	467	2054	2529
8	10	452	2590	3052
9	10	501	3020	3531
10	16	548	3599	4163
11	10	582	3560	4152
12	13	617	3095	3725
13	16	485	2972	3473
14	15	560	3504	4079
15	12	565	3603	4180
16	19	545	3122	3686
17	7	579	2746	3332
18	7	448	2340	2795
19	11	537	2765	3313
20	10	512	2460	2982
21	14	453	2341	2808
22	17	415	1797	2229
23	22	444	1631	2097
No Time Indicated	6	271	601	878
Grand Total	324	10,870	53,917	65,111 (100%)
Day-time (06:00-17:55)	144 (00.22%)	6,292 (9.66%)	35,257 (54.15%)	41,693 (64.03%)
Night-time (18:00 – 05:55)	180 (00.28%)	4,578 (7.03%)	18,660 (28.66%)	23,418 (35.97%)

However, there were a number of accidents last year that did not have the time of the incident recorded. These involved six (6) fatal, two hundred and seventy one (271) non-fatal injury and six hundred and one (601) damage to property.

Overall, about 64.03% of accidents occurred during the daytime, while 35.97% occurred during the hours of darkness and without time indicated. Fatal accidents were high during night – time with 00.28%.

Breakdown of vehicle types involved in accidents

The classification of vehicle types within MMARAS is as follows:

- Cycle/Pedicab : human-powered vehicle
- Motorcycle : two-wheeled mechanically propelled Vehicle
- Motor Tricycle : three-wheeled passenger-carrying Mechanically -propelled vehicle
- Car : privately-owned mechanically propelled Vehicle, which included all forms of 'private Use' small passenger-carrying vehicle.
- Jeepney/Taxi/Fx/Bus : mechanically-propelled vehicle which Carries passengers on payment of a fee
- Van : small vehicle for carrying goods
- Truck : large vehicle for carrying goods

The following table indicated the distribution of vehicles involved in accidents, during the past year:

Type of Vehicles	Fatal	% of Total	Non-Fatal	% of Total	Damage	% of Total	Total	% of Total
Pedicab/ Cycle	20	4.76 %	706	4.18 %	355	0.34 %	1081	0.89 %
Motor- Cycle	79	18.81 %	4,097	24.24 %	4,208	4.05 %	8384	6.92 %
Motor Tricycle	11	2.62 %	1,348	7.98 %	1726	1.66 %	3085	2.55 %
Car	98	23.33 %	5,169	30.59 %	56,382	54.30 %	61649	50.88 %
Jeepney	35	8.33 %	1,797	10.63 %	9,735	9.38 %	11567	9.55 %
Taxi/Fx	12	2.86 %	1,017	6.02 %	6,664	6.42 %	7693	6.35 %
Bus	22	5.24 %	582	3.44 %	4,795	4.58 %	5399	4.46 %
Van	46	10.95 %	1,401	8.29 %	12,815	12.34 %	14262	11.77 %
Truck	89	21.19 %	774	4.58 %	7,145	6.88 %	8008	6.61 %
Train	8	1.90 %	7	0.04 %	11	0.01 %	26	0.02 %
TOTAL	420	100%	16,898	100%	103,836	100%	121,154	100%

According to Annual 2004 statistics (new and renewal) released by the LTO, the distribution of registered vehicles in Metro Manila is:

Motor Cyles /Motor Tricycles	Cars/Utility Vehicles/SUV	Bus	Truck/ Trailers	Total
290,850	1,128,895	13,766	71,898	1,505,409
19.32%	74.99%	0.91%	4.76%	100%

While this does not necessarily reflect the usage of vehicles in terms of vehicle-kms, it is interesting to note that Motorcycles and Motor Tricycles were involved in 21.4% of fatal and 32.3% non-fatal accidents, although they only constitute 19.32% of the vehicle fleet. The same can be said for Trucks with 21.1% fatal and 4.6% non-fatal accidents with 0.91% of the vehicle fleet..

Accident maps

Maps indicating the location of the 'fatal' and 'non-fatal' injury accidents during the past year are not available but it is stored and can be retracted and will be distributed to all Districts Offices once this Unit is provided with computer printer. While there are still some accidents, whose location could not be plotted accurately – and which have not been included on the maps – these would not significantly change the general accident patterns indicated on the maps.

Collision Type

Shows the accident statistics by collision type.

Collision Type	Fatal	Non Fatal	Damage	Total
Angle Impact	31	2005	2098	4,134
Head-on	5	148	10	163
<i>Hit object</i>	19	340	527	886
Hit parked vehicle		22	409	431
Hit Pedestrian	180	4006		4,186
No Collision Stated (based on Police Blotter Book)	15	585	45285	45,885
No Collision Stated (Hit and Run)	6	130	787	923
<i>Other</i>	33	583	655	1,271
Rear-end	19	844	685	1,548
Self-Accident				
Side Swipe	16	2207	3461	5,684
Grand Total	324	10,870	53,917	65,111

Accident Causations

Shows the accident statistics by accident causation.

Accident Factors	Fatal	Non Fatal	Damage	Grand Total
Alcohol suspected	11	33	1	45
Bad overtaking	5	427	241	673
Bad turning	7	421	876	1304
Disobey enforcer's signal		6	2	8
Disobey sign or traffic lights	4	187	237	428
Inattentive	133	4189	524	4846
Mechanical defect suspected	10	134	2	146
No signal		51	4	55
None		26	2	28
Other	19	526	376	921
Tired / Asleep	1	63	3	67
To fast		1		1
Too close	7	750	690	1447
Too fast	106	3238	2776	6120
No Accident Factor Stated	21	818	48183	49022
Grand Total	324	10,870	53,917	65,111

Top Five (5) Accident Causations

- (1) Too Fast**
- (2) Inattentive**
- (3) Too close**
- (4) Bad turning**
- (5) Other**

MMDA has been coming up with solutions to solve the problem in Road Safety, almost all of the Authority's projects are geared towards Public Safety. Pedestrians facilities and signage's are designed to promote safety and convenience, Footbridges has been put up at major choke points where pedestrian volume is high, Sidewalk clearing operations intensified, geometric improvements at accident prone areas undertaken among others. Road Safety is a global concern, and the task to lessen the number of traffic accidents is a high objective but possible with the cooperation and support of the public.

Accident Prone Areas

Based on the accidents maps produced for each of the five districts, a number of Accidents prone locations are emerging. These are:

District	Location
Central	Commonwealth Ave. corner Tandang Sora Ave.
	Commonwealth Ave fronting St. Peter Parish Church
	Commonwealth Ave. corner Riverside
	Commonwealth Ave. fronting Commission On Audit (COA)
	Commonwealth Ave. corner Feria Road
	Katipunan Ave. corner P. Tuazon Blvd.
	EDSA corner Aurora Blvd.
	Commonwealth Ave. corner Litex Road
	Commonwealth Ave. corner Regalado Ave.
	Commonwealth Ave. fronting Toyota Motors Bldg.
Eastern	C-5 road at Flyover, Brgy. Bagong Ilog (Pasig)
	Doña Julia Vargas Ave. corner Rodriguez-Lanuza (Pasig)
	Ortigas Ave. corner E. Rodriguez Jr. Ave. (Pasig)
	EDSA corner Shaw Blvd. (Mandaluyong)
	EDSA corner Boni Ave. (Mandaluyong)
	Maysilo Circle corner Boni Ave. (Mandaluyong)
	Sumulong Highway corner Mayor Gil Fernando Ave. (Marikina)
	Sumulong Highway corner Shoe Ave. (Marikina)
	Katipunan Ave. corner Rainbow St. (Marikina)
	Ortigas Ave. corner Connecticut (San Juan)
Ortigas Ave. corner Wilson St. (San Juan)	
Northern	C-3 Road corner Dagat - dagatan Ave. (Caloocan)
	A. Mabini Ave. corner C-3 Road (Caloocan)
	Rizal Ave. Ext. corner 6 th Ave. (Caloocan)
	EDSA fronting MCU Hospital (Caloocan)
	McArthur Highway fronting Fatima Medical Center (Valenzuela)
	McArthur Highway fronting Puregold Supermart (Valenzuela)
	C-3 Road corner Radial Road 10 (Navotas)
Southern	Taft Ave. corner EDSA (Pasay)
	Roxas Blvd. fronting Asian Institute of Maritime Studies (AIMS) (Pasay)
	EDSA corner Pres. Diosdado Macapagal Blvd. (Pasay)
	Carlos P. Garcia Ave. (C-5 road) fronting Market Market (Taguig)
	Carlos P. Garcia Ave. (C-5 road) fronting Heritage Park (Taguig)
	Real St. fronting SM Almanza (Las Piñas)
	Real St. fronting URCI (Las Piñas)
	Real St. fronting UNIWIDE (Las Piñas)
	Marcos Alvarez Ave. corner Real St. (Las Piñas)
J.P. Rizal fronting Guadalupe Bliss (Makati)	

	Sen. Gil Puyat Ave. corner Makati Ave. (Makati)
	Ayala Ave. corner Paseo De Roxas (Makati)
	Ayala Ave. corner Herrera st. (Makati)
	EDSA corner Ayala Ave. (Makati)
	Alabang Zapote Road fronting Alabang Town Center (Muntinlupa)
	National Road fronting Metropolis Alabang (Muntinlupa)
	Alabang Zapote Road corner Bridgeway Ave. (Muntinlupa)
	National Road corner Montillano (Muntinlupa)
	Dr. A. Santos Ave. fronting SM Sucat (Parañaque)
	Dr. A. Santos Ave. fronting Manila Memorial Park (Parañaque)
	Dr. A. Santos Ave. corner A. Canaynay Ave. (Parañaque)
	Pres. Diosdado Macapagal Ave. corner Bradco Ave. (Parañaque)
Western	Ayala Blvd. corner Taft Avenue
	P. Burgos St. corner Maria Y. Orosa
	Pres. Osmeña Highway (SSHW) corner San Andres St.

On-going Activities / Plans of the RSU

- **Intensified Data Collection**
Good accident record is vital in analyzing and devising appropriate solutions / remedial measures to accident-prone locations. The RSU Data Researchers Group together with the Traffic Enforcement Group (TEG) of the PNP has been working closely to further improve the collection of accident data on 'fatal' and 'non-fatal' accidents including the "Damage Only" accidents.
- **Inspection of Accident Sites**
The RSU has prepared a schedule for the ocular inspection of accident - prone locations to gather more information that would be useful in evaluating accident sites. We plan to visit and inspect three to four accident locations on a weekly basis.
- **Road Safety Audit**
Road safety features, or lack of it, at selected locations will be identified and appropriate remedial actions will be developed. Engineering measures will be adapted and or developed for five accident locations every quarter of the year.
- **On- Going Training of Technical Staff**
A lot of on the job training will be undertaken for the new technical staff to developed their knowledge and skills in this new kind of work and endeavor.
- **Revision of MMARAS Form and the Database**
It is necessary to revise the MMARAS Form and the Database to incorporate the other data needed in the analysis of traffic accident.
- **Acquire Additional Equipment/**
It is important to acquire additional equipment such as service vehicle, computers, digital cameras, printer, and other office supplies that enables the unit to perform their tasks well.

SAFETY MEASURES

1. Installation of “Pedestrian Footbridges” along Metro Manila’s major thoroughfares or major choke points wherein pedestrian volume is high.
2. Improvement of Sidewalks, to encourage pedestrian to pass thru.
3. Installation of various Traffic Facilities (gantry, signages, barriers, see-thru fence, etc.) to promote safety and convenience.
4. Application of “Lane Markings”, for both vehicles and pedestrians.
5. Installation of “Reflectorized Sash Stickers” on concrete barriers to be easily recognized by motorists especially during night time.
6. Installation of Steel Barriers along the sidewalks to separate vehicles from pedestrians.
7. Strict enforcement of road violations by the various Traffic Enforcement Units.

Updated (April 29, 2011)

Source : Metro Manila Accident Reporting and Analysis System (MMARAS) Database

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