

Comprehensive and Integrated Speed Management Strategy

of the Emirate of Abu Dhabi (2014)



Foreword

Driving at a high speed (unsafe for traffic and weather conditions) is a serious road safety problem that accounts for a high number of road crash fatalities and injuries in the Emirate of Abu Dhabi.

A comprehensive speed management strategy has been developed by a committee of experts in the field of traffic safety from various stakeholders including Department of Transport, Abu Dhabi Police, Abu Dhabi Municipality, Al Ain Municipality, Western Region Municipality and Urban Planning Council.

The committee was established by the HE Chairman of the Joint Safety and Traffic Solutions Committee (JSTSC).

The Speed Management Committee worked under the directions of the members of the JSTSC. The continuous support and helpful advice from the members of the JSTSC were very instrumental in completing this strategy.

This study is an example of an effective coordination and team work of the members from various stakeholders who worked together for almost one year. It was a challenge to align different professional opinions and to keep focus on key issues related to speeding problem. The efforts contributed by each individual member of the Speed Management Committee are appreciated and admired.

The committee thoroughly examined the causes of the speeding problem in the Emirate of Abu Dhabi and proposed actions/recommendations related to Engineering, Laws and Legislation, Enforcement, Education and Awareness and Stakeholders Coordination.

The actions are proposed in accordance to the best international practices.

A number of the best international practices were consulted including: European Conference of Ministers of Transport, World Health Organization, World Bank, Speed Management Strategies from Australia, USA, UK, and European Countries.

It is hoped that this Speed Management Strategy will assist stakeholders in addressing the speeding problem, thereby reducing road crash fatalities and injuries and providing safe and efficient movement of people (including pedestrians) whilst protecting and enhancing quality of life in the Emirate of Abu Dhabi.

The Speed Management Strategy is a living document and will be updated on regular basis to keep abreast with the best international practices and/or when issues related to its contents are changed.

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Vision

“To establish a safe sustainable environment to encourage drivers willingly comply with the posted speed limits on all roads in the Emirate of Abu Dhabi”.

Objectives

Objectives

The objectives of the Speed Management Strategy (SMS) are to:

- Reduce road crash fatalities and injuries in the Emirate of Abu Dhabi by enhancing the compliance rate of the posted speed limits.
- Facilitate the safe and efficient movement of people (including pedestrians) whilst protecting and enhancing quality of life.

The Speed Management Strategy comprehensively covers areas including Engineering, Education, Laws and Legislation, Enforcement, and stakeholder coordination. The strategy provides guidance to stakeholders including Department of Transport, Department of Municipal Affairs, Abu Dhabi Police, Urban Planning Council and other authorities to establish a sustainable environment in which

all drivers shall willingly respect the speed limits on all roads at all times.

The Strategy aims to develop a set of criteria's, targets, and recommendations that will produce when successfully implemented an increased compliance rate of the posted speed limits and reduced fatalities/injuries.

Key Performance Indicators

The Key Performance Indicators (KPIs) to assess the effectiveness of the strategy would include:

- Compliance rate of the posted speed limits (percentage of drivers driving close to the post speed limits).
- Observed average speed of the traffic stream on rural and urban roads.
- Percentage of drivers exceeding the speed limits by 10,20,30 and more then 30 Km/h.

Framework of the Strategy

Figure 1 presents a high level framework of the Speed Management Strategy. The framework illustrates a cyclical process of **regularly assessing the speeding problem and evaluating the speed management tools** to design and implement effective and robust solutions.

The framework includes six major components of the strategy:

1. Assessing the speeding problem
2. Engineering
3. Laws/Legislation
4. Education and Awareness
5. Enforcement
6. Stakeholder Coordination

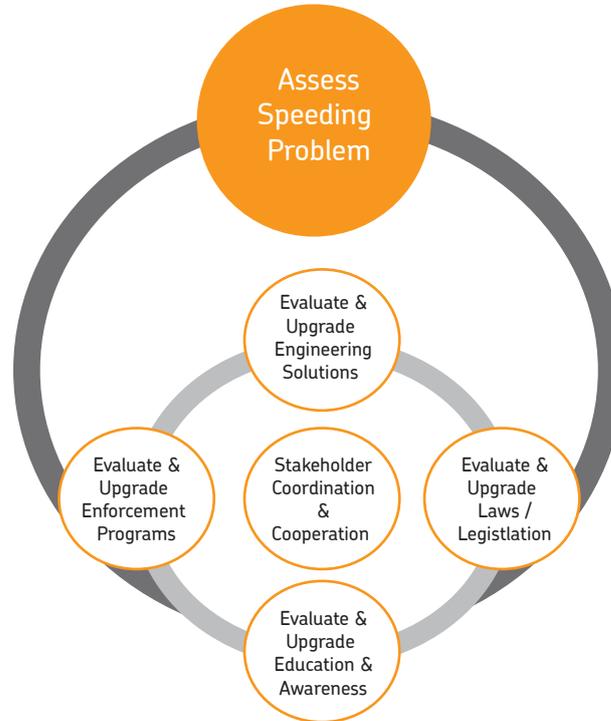


Figure 1: Framework of the Speed Management Strategy

As illustrated in the framework **Figure 1** the strategy is to **review/evaluate, upgrade, and implement** the speed management tools.

The strategy focuses on enhancing the compliance of the posted speed limits that can be achieved by introducing appropriate speed limits, for example, raising awareness of the drivers, improving laws and enhancing enforcement. **Figure 2** presents examples of various measures to influence driver behavior in complying with the posted speed limits.

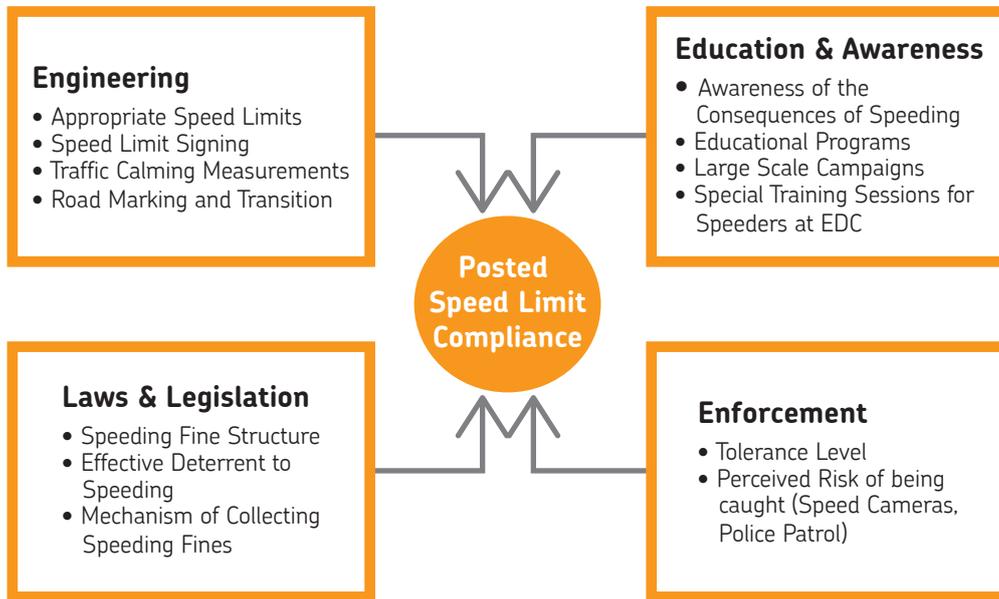


Figure 2: Examples of measures to enhance speed limits compliance

1. Assessment of Speeding

Issues/Challenges in assessing speeding problem

Currently there is no formal process exists in the Emirate of Abu Dhabi to regularly collect the data and assess the speeding problem. Mostly the actions such as engineering improvements or enhancing enforcement are instigated based on the final outcome i.e. fatalities and injuries.

Proposed Policy for assessing speeding problem

Adopt a **proactive approach** to regularly collect the data and assess the speeding problem to identify the potential causes and instigate appropriate actions before a road crash occur.

The following data shall be collected and analyzed to assess the problem.

- Spot Speed Survey Data
- Speeding Violations Data
- Data related to crashes caused by speeding
- Drivers' Questionnaire Surveys

Proposed Actions for assessing speeding problem

- **Every six to twelve months** conduct complete assessment of the speeding problem for whole road network, and present the results to JSTSC to seek their guidance to instigate appropriate actions.
- **Prepare a monthly report** based on the speed survey data that will be collected 24/7 from almost all main roads in the Emirate. The report shall identify the roads with high non-compliance rates of the speed limits. The monthly report shall be shared with Abu Dhabi Police to assist in enforcement actions.

2. Engineering

Issues/Challenges in Engineering

There are various engineering issues in the Emirate of Abu Dhabi to motivate drivers to not comply with the speed limits, for example,

- Inappropriate posted speed limits on some roads.
- Inconsistent speed limits for similar types of roads.
- Inconsistent and unclear speed limits signs at some roads.
- Irregular spacing between signs of the speed limits on some roads.
- Design characteristics of the roads like width, availability of wide shoulders, longer distance between intersections.
- Inconsistent traffic calming measures on some roads.

Proposed Policy for Engineering

Annually evaluate and upgrade Engineering Solutions to establish a safer environment in which drivers can use the roads with confidence, convince and free from risk of crashes.

Proposed Actions for Engineering

- Adopt uniform posted speed limit of 60 Km/h for urban arterial roads inside the city and 80 Km/h for urban arterial roads outside the city.
- Adopt uniform posted speed limit of 40 Km/h for all residential streets and 30 Km/h for school zone streets (only during the school time otherwise 40 Km/h).
- Develop a speed assessment criteria that shall be applied consistently across the Emirate for all roads with similar road geometry and similar adjacent land use environment.
- Every 3 to 5 years conduct a review of the posted speed limits of all highways and main roads in the Emirate to ensure that appropriate and consistent speeds are applied.
- As per the best international practices the road authorities (Department of Transport and Municipalities) shall be responsible for setting the posted speed limits for roads in their jurisdictions.
- Any change in the speed limits shall be publicized through media by respective stakeholder.
- Review and modify the posted speed limits signs to ensure consistent signs with appropriate spacing are applied across the Emirate.

- Remove the inconsistent speed signs and introduce simple and effective signs to grab the attention of public and to increase deterrence of being caught. For example, remove Max Speed Signs (big green color) that were temporarily installed for one year to educate drivers and have served their purpose.
- Develop a routine of reviewing and repairing the speed limits signs for every six to twelve months for all highways and main roads in the Emirate.
- Update the existing Traffic Calming Guidelines and publish it under the Joint Safety Committee.
- Establish low speed limits zones, for example CBD, school and residential zones.
- Introduce Transition Zones at suitable locations where appropriate for highways and arterial roads in Abu Dhabi, Western Region and Al Ain.
- The temporary speed limits in the work zones shall be in accordance to the Work Zone Manual published by JSTSC.
- Design of all urban roads in the Emirate of Abu Dhabi shall comply with the Urban Street Design Manual developed by Urban Planning Council.
- Research best practices related to engineering solutions such as advanced traffic control devices etc.

Designing Safer Roads

The design of an urban road is also an important factor to influence the speed choice behavior of drivers.

The design refers to lane width, median width, roadside development, and number of lanes. It is a complex challenge to design an urban road safer for all road users including pedestrians, cyclists and drivers.

Abu Dhabi Urban Planning Council has prepared the **Urban Street Design Manual (USDMM)** in coordination with concerned stake-holders. USDMM provides a context sensitive street design standards that accommodates the need of all road users. USDMM is in line with the goals of the “Plan Abu Dhabi 2030” to promote walking,

enhance connectivity and create a sustainable urban environment.

The USDMM design standards emphasize on providing a safe environment for pedestrians and cyclists, the most vulnerable users on urban streets, thereby improving walk-ability, sustainability and public health.

The application of the USDMM has promising potential in reducing the average urban speed, and improving road safety.

The Speed Management Committee recommends the design of all urban roads in the Emirate of Abu Dhabi shall comply with the USDMM.

3. Laws and Legislation

Issues/Challenges in Laws and Legislation

There are various issues or challenges related to Laws and Legislation that contribute in the speed choice behavior of drivers, for example:

- The number of times that a driver needs to be caught for violating the speed limits before his/her license is suspended or vehicle is confiscated is a lot longer than many countries.
- Exceeding the speed limit by 60 or 80 or more would have same penalties that is, penalties for high speeders remain unchanged however as the best international practices the severity of penalties substantially rise for high speeders (i.e. driving above 160 Km/h).
- There are no Black Points for exceeding the speed limit by 50 Km/h, however, research suggests by driving 50 Km/h above the speed limit could increase the crash risk more than 160%.
- Same penalties are applied for violating the speed limit on rural and urban roads. For example, driving 30 Km/h more on a road of 60 Km/h limit would have the same fine as driving 30 Km/h more on a road of 120 Km/h limit. However, the crash risk on a lower speed limit road would be different from the crash risk on a high speed limit road.

- Drivers who repeatedly (4-6 times/month) violate the speed limits are penalized same as the drivers who occasionally violate the speed limits. It might be useful to introduce a special fine structure for drivers who consecutively violate speed limits.
- There are no well-defined penalties for driving very slow that cause hindrance to other drivers.

Proposed Policy for Laws and Legislation

Policy is every five years review/evaluate/update existing laws and legislation to improve the legal deterrence.

Proposed Actions for Laws and Legislation

- Raise penalties for high speeders, for example, drivers driving above 160 Km/h shall be heavily penalized because such drivers clearly disregard laws and threat to road safety.

- Introduce special penalties for drivers who repeatedly violate the speed limits. For instance, if a driver violate the posted speed limit 4-6 times/month in a row then he/she shall be heavily penalized separate from other occasionally violators.
- Revise existing 50% discount policy, for example, the 50% discount on speeding fine might be applicable to a limited number of violations (for example, 3 per month) and the discount might be offered to those who pay the fine within a month after notification.
- Notification of the speeding fine shall be improved by:
 - Reducing the notification time to maximum 10 days.
 - Extending the notification of violations to all drivers.
 - Increasing information in the notification such as speed recorded by Radar, Posted Speed Limit, Name of Road, and Time of Violation etc.
- Insurance companies shall be given permission to access the driver's safety performance record from Police to decide the vehicle insurance premium. For example, if a driver who obtained a higher number of speeding tickets, his/her insurance premium shall be higher.

4. Education and Awareness

Issues/Challenges in Education and Awareness

Examples of issues related to Education and Awareness are as follows:

- Lack of awareness about consequences of speeding, particularly among young drivers.
- Misconception about speeding problem among many drivers. The reasons for such misconception and lack of awareness could be a limited focus on danger of speeding during driver's training courses and insufficient or no formal material exists on road safety education within school curriculum.

Proposed Policy for Education and Awareness

Policy is to promote educational and awareness activities including campaigns, seminars/workshops and training sessions for target groups to focus on dangers of speeding.

Proposed Actions for Education and Awareness

- Conduct campaigns Emirate-wide focused on dangers of speeding for young drivers in Secondary Schools, Colleges and Universities.
- Frequently publicize largely benefits of complying with Speed limits on media.
- Induct special sessions focused on dangers of speeding within drivers' training program at Emirates Driving Company for new drivers, and also develop special training sessions for target drivers convicted of violating speed limits.
- Establish a platform where crash survivors could publicize their experiences.

5. Enforcement

Enforcement of the traffic laws is the sole responsibility of the Abu Dhabi Police. It is agreed in the speed management committee that any recommendations related to enforcement will be discussed and agreed with the Abu Dhabi Police before implementation.

Issues/Challenges in Enforcement

There are various enforcement issues that could motivate drivers to not comply with the posted speed limits, for example,

- Disclosed tolerance level
- Chances of being caught for speeding
- Publicity of the speed enforcement
- Limited evaluations of the speed enforcement tools

Proposed Policy for Enforcement

Policy is to annually evaluate and update the enforcement activities in accordance to the best international practices.

Proposed Actions for Enforcement

- In accordance to the best international practices the tolerance level on posted speed limit shall not be fixed and shall not be known to public.
- Tolerance level shall be reduced to ensure greater adherence to posted speed. Tolerance level should only be considered to allow for any possible measurement errors and to satisfy the legal process. For example, for urban roads tolerance level shall not be more than 10 Km/h.
- Adopt proactive approach for installing speed cameras:
 - All new main roads shall be equipped with speed cameras/Radars
 - For existing roads results of the speed survey data shall be considered as a factor for installing speed camera

- Currently 275 speed cameras are being deployed based on Abu Dhabi Police requirements. The Speed Management Committee recommends that the deployment of future speed cameras consider the following:
 - Install additional Fixed Radars to maintain actual spacing of 8 Km and perceived spacing of 2 Km and rotate the radars from time to time in boxes so that drivers shall not be able to recognize whether or not a box is equipped with radar. In regards to best international practices for spacing between radars some examples are, spacing between radars in Sweden 4.5 Km, Norway 3.5 Km, Finland 3.5 Km, and Dubai 1.5 Km.
- As a trial, introduce point to point on cameras on a few roads to evaluate the effectiveness of the point to point cameras. Point to point cameras have been very effective in improving speed limit compliance in countries including UK, The Netherlands, Switzerland and Australia.

- Intensify enforcement efforts by expanding resources to increase mobile camera program and police patrol.
- Develop a mechanism to conduct extensive publicity of the enforcement operations to increase awareness of drivers about certainty of being caught and share safety benefits of enforcement.
- Conduct annual review of the enforcement operations that shall include the evaluation of fixed, mobile, point to point cameras and police patrol.
- Promote visible enforcement operations for cameras/radars and also for police patrol to demonstrate enforcement is highly active. Probably, paint all fixed radars with White or Yellow color to make them visible at night. Objective is to increase posted speed limit compliance, not to collect fines.
- Increase mobile police patrol vehicles within traffic stream to monitor dangerous acts of drivers, and to cut back the use of Radar detectors.

6. Stakeholders Coordination

It has been well established that the most effective element in developing and implementing a successful Speed Management Strategy is to create an effective and productive coordination and cooperation among stakeholders. As shown in **Figure 3**, the core of the strategy is the **Coordination and Cooperation Among Stakeholders**.

Proposed Actions for Stakeholders Coordination and Cooperation

- The current speed management committee needs to be strengthening by nominating more members from different stakeholders.
- The current speed management committee shall be responsible for updating and implementing the Speed Management Strategy.
- All the major issues associated with the speed management such as change in speed limits, enforcement, laws/legislation etc. shall be referred to Speed Management Committee for technical review and approval.

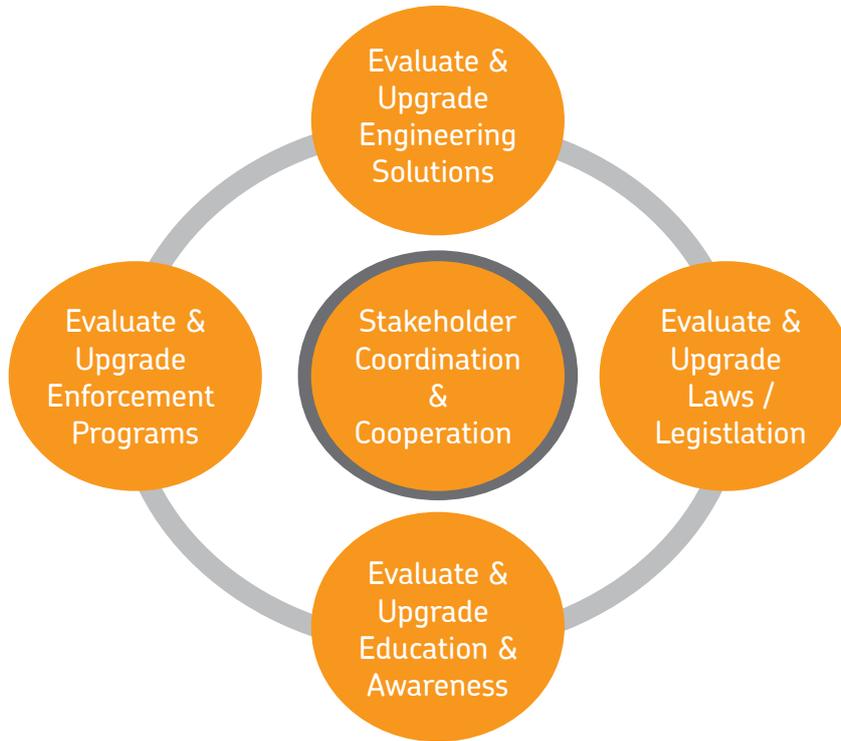


Figure 3: Role of Stakeholders Coordination and Cooperation

Next Steps

Next Steps

- A detailed action plan including the proposed actions, selection of leading and supporting stakeholders and the proposed time frame for each proposed action will be developed in coordination with stakeholders.
- The Speed Management Committee will supervise the implementation of the actions that will be proposed in the detailed action plan.
- The concerned stakeholders will be responsible for executing the proposed actions relevant to their mandates.
- The most important step will be to establish an evaluation mechanism to assess the effectiveness of the actions in Engineering, Education, Enforcement, Laws and Legislation.
- The Speed Management Committee will review and update the strategy and actions based on the outcomes of the evaluations.

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مجلس أبوظبي للتخطيط العمراني
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