



c/o Terra Caribbean
Welches
St. James

BARBADOS MOTORING FEDERATION
ENVIRONMENTAL CODE OF PRACTICE
ADOPTED: SEPTEMBER 25, 2024

Table of Contents

ENVIRONMENTAL PHILOSOPHY	3
INTRODUCTION	4
PROTOCOLS	5
Environmental Responsibility:	5
Direct areas of Concern	5
RESPONSIBILITIES OF PROMOTERS AND ORGANISERS.....	6
THE RESPONSIBILITY OF THE ORGANISERS AFTER THE EVENT	7
RESPONSIBILITIES OF COMPETITORS AND SERVICE CREWS	8
RECOMMENDATION FOR THE RECREATIONAL AND TRANSPORT MOTORIST.....	10
APPENDICES.....	11
APPENDIX 1 – NOISE	12
APPENDIX 2 - PROTECTION OF THE SOIL AND WATER SOURCES.....	18
APPENDIX 3 - FUEL STORAGE & SAFETY.....	20
APPENDIX 4 - SANITARY FACILITIES.....	21
APPENDIX 5 - WASTE MANAGEMENT	23

ENVIRONMENTAL PHILOSOPHY

The UN's 2030 Agenda for Sustainable Development is comprised of 17 Sustainable Development Goals for 2030. These goals provide a common framework for organisations to contribute to sustainable development.

The United Nations Framework Convention on Climate Change (UNFCCC) was launched during COP24 to gather sports organizations, teams, athletes, and fans in a concerted effort to raise awareness and action to meet the goals of the Paris Agreement.

We commit to the five principles of the UNFCCC, incorporating them into its organisational strategy and overall approach to environmental sustainability, these being:

1. Undertake systematic efforts to promote greater environmental responsibility
2. Reduce overall climate impact
3. Educate for climate action
4. Promote sustainable and responsible consumption
5. Advocate for climate action through communication

It is our duty and the duty of the people that we work with to ensure that these principles are adhered to in all our activities. The future of this world and the happiness of the people that reside in it lie not in big, grandiose gestures but in the actions that we take every day to make it a better place for those that follow.

“You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make”

– *Dr Jane Goodall, primatologist and anthropologist*

“Climate change is the single greatest threat to a sustainable future but, at the same time, addressing the climate challenge presents a golden opportunity to promote prosperity, security and a brighter future for all”

– *Ban Ki-moon, former Secretary-General of the United Nations*

“Transformation is needed everywhere, including within our organisation. We are not just going to take a backseat and direct change – we are also committed to playing our own part in the transition towards a more sustainable future. We have set ourselves ambitious targets – including one to reach net zero by 2030. Achieving carbon neutrality in 2021 was a first step, but we know there is still a lot to be done and we are embarking all our motor sport and mobility stakeholders on the journey.

– *FIA: Accelerating A Just Transition: The Motor Sport and Mobility Perspective*
[COP28 – 2023]

INTRODUCTION

All human activities, whether work, domestic or recreational in nature, will have some impact on the environment. The challenge of participating in Motorsport may be enjoyed at circuit, road and off road venues and is an activity whose enjoyment is based on the generation of mechanical energy to achieve its objectives. The generation of this mechanical energy requires the use of a wide variety of chemical products, which, both in their manufactured state and in utilization in the engine and other components of the vehicle are known to be toxic to the atmosphere, soil, water sources, flora, and fauna.

The active participation of multiple motor vehicles in an event generates high levels of sound at all motorsport venues. To this level of sound must be added the extra sound generated by venue music, public address systems, traffic, and people. Whilst this activity and accompanying noise may be exhilarating to motorsport enthusiasts, it may be interpreted as problematic when it disturbs the expected wellbeing and life patterns of others in the vicinity of motorsport events.

The increasing popularity of Off-Road Vehicles motorsport events and recreational exploring in four-wheel drive vehicles is a significant threat to both established and already threatened ecosystems, particularly in beach areas.

Motorsport is one of the three categories in which motor vehicles and motorcycles are utilized, the other two being transport and recreation. None of these three categories are exempt from environmental awareness or pollution. This ASN positions itself at the forefront of environmental awareness and protection. Demonstrating and communicating an awareness of environmental risk through promotion of its own environmental protection and safety code to all motorsport competitors and their crews, officials, and organizers.

The Barbados Motoring Federation Acknowledges that it has

- A responsibility for ensuring that all event organizers as well as competitors and officials are informed of, understand and comply with government requirements for the protection of our environment.
- A desire for competitors in all categories of motorsport to enjoy and take satisfaction in participating in their chosen sport while caring for the environment at the same time.
- An aspiration that motorsport should be an outstanding example to all motorists, leading the conversation for the protection of the environment.

PROTOCOLS

Environmental Responsibility:

Environmental care is the responsibility of all but specifically tasked in this environment are:

- Event Officials
- Promoters and Organizers
- Competitors and their Service Crews
- The Public and Spectators

Direct areas of Concern

- The code will stress regulations and recommendations regarding:
- Sound Measurement and Noise Control.
- Fuel Composition, Storage and Disposal of fuel containers.
- Protection of the Soil and Water Sources
- Cleaning of Vehicles
- Fire Prevention and Control
- Sanitation
- Waste Management
- Public and Environmental Safety Measures

RESPONSIBILITIES OF PROMOTERS AND ORGANISERS

1. Particularly for off road events and multiple stage rallies, to consult well in advance of the event with the local authorities regarding the selected routes to and from the venue of the event which will result in no or minimal damage to the environment and minimal disruption to the daily life patterns of the surrounding area.
2. Identify areas that may be vulnerable and ensure their protection.
3. At fixed circuits, ensure that the sanitary and ablution facilities are well maintained, clean and hygienic and functional for competitors, officials, and spectators. From an estimate of the expected spectator attendance, determine whether extra temporary toilets will be required (See Appendix - SANITARY FACILITIES)
4. Provide sufficient and adequate sanitary and ablution facilities for road and off-road events. If possible, attempt to locate service parks and refuelling points at sites that have sanitary and or ablution facilities, whether permanent or temporary. If this is not possible, arrange for the hire of these facilities (See Appendix - SANITARY FACILITIES).
5. Ensure that the sanitary facilities available, whether permanent or temporary, will not result in the contamination of the ground, ground or underground water by human excreta, because of faulty or leaking effluent containers or faulty connection to existing sewage points.
6. The preparation and distribution of food and beverages must comply with public health and food hygiene regulations. Waste containers, adequate in size and numbers must be freely available in and around all catering areas.
7. Ensure detailed protocols for the prevention and control of grass fires, particularly in off-road events. Ensure that all grass in parking areas is cut very short.
8. Provide refuse containers and/or sturdy refuse bags, adequate in size and number in all competitor, official and spectator areas, suitable for the disposal of personal, catering and other refuse.
 - every person at the venue to be encouraged to properly use the containers.
 - Refuse must not be allowed to spill over and contaminate the ground around the containers and all containers must be emptied frequently. (See Appendix– WASTE MANAGEMENT)
9. Sturdy containers or tanks, specifically labelled in bold type and placed on a level concrete surface, must be provided for the separate collection of drained fuel, oil, degreasing, cooling and brake fluids, to prevent indiscriminate and possibly hazardous disposal or spillage of these fluids on to the ground and the escape of fluid vapours into the air. These containers should be sealed with a small entry or funnel for the pouring of the fluids into the container.

10. A company that specializes in the removal of general, chemical and wastewater and that is registered to perform this function must be contracted to remove all waste and refuse within 3 days of the end of the event. (See Appendix - WASTE MANAGEMENT) It is essential to prevent the illegal dumping of any waste.
11. Ensure that the fuel used complies with the regulations of this code. (See APPENDIX - FUEL)
12. Ensure that the time limits arranged for venue music, the venue public address system, practice and racing are not exceeded.
13. Ensure that the maximum permissible levels for spectator and competitor sound production (See APPENDIX– NOISE) are not exceeded either between or during practice or racing. Ensure that excessive and inappropriate noise production is prevented at tourist rally events.
14. Recycled paper or plastic bags should be distributed to competitors and spectators at collection of documentation or when purchasing an admission ticket. These bags are for the collection of small items of personal waste such as food wrapping, sweet papers, etc.
15. Recyclable and re-usable materials, whenever possible, must be used for route markers for competitors and spectators and site identification. Where organizers are forced to utilize paint signage on rocks and trees; such paint must be water based and should be biodegradable.
16. The planning and construction of routes for non-circuit events must ensure that no part of the route causes any environmental damage.
17. It is mandatory for all event organizers to conduct sound level meter tests of competing vehicles and motorcycles at events.

THE RESPONSIBILITY OF THE ORGANISERS AFTER THE EVENT

1. All signage, billboards, posters, route markings, and barrier tape required for the event itself must be removed within 7 days of the end of the event, preferably immediately after the end of the event.
2. All advertising material for the event, including posters, pamphlets, leaflets, etc, must be removed from public display within 7 days of the end of the event and destroyed or recycled.
3. Ensure that all arrows, route markers and barrier tape are removed from the event venue/venues immediately after that section of the route has been completed. These items are not only a threat to the environment but may be life threatening to farm and domestic animals.

4. Ensure the separate removal of containers for oil, cleaning rags, filters, medical and other hazardous waste by waste removal companies and their expert disposal.
5. Where significant damage has occurred to trees and large shrubs on private property, notify the owner immediately after the event in writing and arrange for the replacement of the damaged flora, as required by the owner. If state, or local authority property is used, a similar procedure must be followed.

RESPONSIBILITIES OF COMPETITORS AND SERVICE CREWS

1. Every competitor, member of a service crew and official must be aware of the contents of the environmental protection code. Highlights of the code that have special reference to the current event should be addressed at briefings by the organizers.
2. Unnecessary and prolonged running and revving of engines must be avoided to prevent noise pollution.
3. Ensure that the motorcycle or motor vehicle complies with the maximum sound level allowed for the motorsport discipline to be competed in. (See Appendix – NOISE)
4. The leakage and spillage of fuel, oil, cleaning, degreasing, cooling, and brake fluids and any other additive or cleaning agent on to the unprotected ground must be prevented. It is the responsibility of the organizer of the event to provide suitable containers for this type of waste. If the organizer has not provided containers, it is the responsibility of the competitor and their service crews to provide their own containers and to remove the containers at the end of the event. Containers for the collection of used or contaminated oil must have fixed funnel inlets. Separate and clearly marked containers for the collection of oil filters and cleaning rags must be provided.
5. Competitors and their service crews should be issued with paper or plastic refuse bags for the disposal of personal waste. These personal containers must be disposed of both during and after the event in designated refuse containers. Pit and surrounding areas must be kept clean.
6. Competitors must show respect for landowners property. Respecting the private property of landowners can help in ensuring permission of the landowner to use routes through their property for future events.
7. Only designated washing areas may be used for the washing of vehicles. Only water may be used.
8. Negligent or intentional pollution of the service areas or other restricted areas will not be tolerated.
9. Avoid intentionally driving through pools of water, and muddy areas with the aim of splashing water or mud over officials, spectators and fellow competitors.

10. Avoid parking on grass verges, plants and shrubs. Avoid driving over small plants and shrubs in parking areas.
11. Punctured or damaged tyres may not, under any circumstance whatsoever, be left along the route of any event. The discarded tyre must be removed either immediately by the competitor or the competitor's service crew or by advising a marshal to arrange for later collection.
12. The starting of any type of fire along the route or at service parks during off-road events is prohibited under adverse weather conditions, particularly wind. Such fires may become runaway fires which could destroy residential property, and livestock, as well as destroying small animals and insects vital to the ecological balance. An explosion hazard would exist around fuel stores at service parks.
13. Plastic bags and barrier tape negligently left along the route of an event are a cause of pollution but pose serious threats to the lives of children, domestic and farm animals. These must be disposed of at appropriate sites identified for refuse collection.
14. Competitors in off-road events must endeavour to follow the route designated by route markers and not to create new routes or short cuts in attempts to improve their times.
15. Routes to and from events must be done using legally available and designated routes, preventing irreversible damage to other routes.
16. Respect and preserve the environment through which you travel, especially in off-road events. Do not maliciously or intentionally damage trees, the branches of trees, shrubs, or plants. Do not kill or maim any species of fauna. No long-term evidence of the running of a motorsport event, especially off-road events, must be left to scar the environment.
17. Any infringement by the participant or a service crew member of any of the above mentioned requirements, can result in actions being taken against the competitor and/or team.

RECOMMENDATION FOR THE RECREATIONAL AND TRANSPORT MOTORIST

Every motorist and motorcyclist are encouraged to enjoy, to the fullest extent, their travels without leaving damaging footprints from their journey.

Respect road use regulations through your motoring conduct, thus reducing road traffic injuries and deaths. Such rules of conduct should include:

1. The development of driving habits which will ensure the orderly integration of all types of motor transport and the respect of the individual for all other road users.
2. Never dispose of waste on to the roads from either stationary or moving vehicles. All waste must be disposed of at an appropriate refuse container at service stations or at the destination.
3. Flamboyant, aggressive, and competitive driving and riding must be avoided, as the performance of any action unrelated to driving, could result in the causation of road crashes.
4. Excessively loud sound systems are an irritation to other road users and will detract the attention of the driver from the act of driving.
5. Road traffic accidents can result in the destruction of property and the contamination of the immediate vicinity with blood, fuel and other automotive components and hazardous chemicals being transported. Washing away of these substances may result in pollution of the ground and possibly water sources. Broken glass, from windscreens and windows are a hazard to other vehicles, pedestrians, and animals. The potential for the ignition of fires and explosions exists.
6. Never drive or ride under the influence of alcohol, prohibited substances or recreational drugs.
7. Avoid noise pollution by eliminating unnecessary running of engines, fitting excessively loud exhaust systems, or by the excessive use of hooters or horns.
8. Use only routes that are legally available.
9. When travelling in-groups, proceed at a quiet, unobtrusive, and legal speed and in a professional manner which does not obstruct other road users. This is of particular importance in and rallies.
10. Ensure the correct disposal of all used or damaged oil, tyres, batteries, containers, etc whether recyclable or not.

APPENDICES

Potential Environmental risks associated with motorsport activities are being addressed in the following appendices to assist with identification, evaluation and control measures:

Appendix	Title
1	Noise
2	Protection of the Soil and Water Sources
3	Fuel Storage & Safety
4	Sanitary Facilities
5	Waste Management

APPENDIX 1 – NOISE

SOUND vs NOISE

- a. Sound is a physical phenomenon, capable of measurement, originating from a vibrating source. In contrast, noise is the individual's interpretation of a sound and the impact that the sound makes on that individual's lifestyle. Noise is also defined as any unwanted sound.
2. Sound is generated at various sources at motorsport events, in addition to the obvious noise generated by running motorcycle and motor vehicle engines that is expected at any motorsport event. The organizers of the event must be aware of the magnitude and diversity of sound emanating from public address system, public music, possibly originating from different sources, public entertainment, crowd noise, traffic congestion and other sources of sound associated with the event. Reducing excessive noise associated with all motorsport's activities, which should be expanded to include recreational and transport motoring, and taking the public's reaction to noise into consideration, is the responsibility of every competitor, club, official, and organizer.
3. A sound enjoyed by a single individual may be extremely irritating to a second individual. The individual appreciation of sound is dependent on the psychological interpretation of the sound by that individual. When sound is perceived as irritating, persistent or affecting normal life patterns such as conversation or sleep, etc, sound is then interpreted as noise. Motorcycles produce high sound levels and are almost always considered as noisy, a fact that all parties must always bear in mind.

SOUND PRODUCTION AND MEASUREMENT

1. Sound is produced when an object is caused to vibrate: this vibration initiates vibration in the surrounding environment. The vibrating object comes into contact with minute particles in the surrounding air which are set in motion and collide with other particles thus initiating the process of sound radiation away from the vibrating object.
2. The initiated vibrations radiate easily and rapidly in metals and water, but less easily in air. This propagation of sound is defined as the propagation speed or the speed of sound, which is measured at 765 miles/hour (1122 feet per second) or 1224 km/hour (340m/second) at sea level. This is the sound barrier.
3. The unit of measurement of sound pressure is the decibel (dB) which is measured on various scales. Motor vehicle sound is measured on the A-weighted scale dB(A). This is a physical phenomenon characterized by successive fluctuations of pressure in relation to atmospheric pressure. These differences vary in intensity and frequency. The time between 2fluctuations determine the frequency of sound or the pitch and is measured in hertz.
4. Sound originating from a specific source is usually composed of a multitude of sounds vibrating at different frequencies. This constitutes the spectrum of sound.

5. Sound pressure levels increase very rapidly. The human ear is not capable of interpreting the increase as rapidly, as a protective mechanism. As a consequence of this lag period of interpretation, each time the number of identical sound sources is doubled (trumpets, violins, motorcycles at a start line) The sound pressure level measurement is augmented by 3 dB(A) only and not by a doubling of the sound.

THE DAMAGE POTENTIAL OF SOUND

1. The human ear registers differences in frequency. These differing frequencies are processed by different anatomical structures of the auditory organs. An overload of a certain frequency will, ultimately, either partially or totally, damage that part of the auditory apparatus responsible for the processing of that frequency. This will result in initial hearing impairment and eventual hearing loss should the exposure to the sound continue. This situation will be aggravated by exposure to noise in other pursuits and in everyday life or employment.
2. It is vital to remember that this hearing impairment and loss is irreversible. Each motorsport event, whether practice or competition, will result in exposure to a regularly recurring noise caused by multiple sound sources of different sound pressures and frequencies. The susceptibility of the ear to overload damage is not only related to the severity of the sound pressure but also to the frequency of the sound and the length of time that the ear is exposed to the noise.
3. Occupational safety acts recommend that an average exposure to noise of 80 dB(A) experienced for 8 hours a day and 5 days a week for 42 weeks of one year is the maximum sound exposure at which no hearing loss will occur. If the exposure to noise rises to 83 dB(A), the exposure time should not exceed 4 hours a day and noise exposure of 110 dB(A) lasting 30 seconds is as damaging as exposure to 80 dB (A) continuously.
4. It must be clearly and repeatedly documented to all motorsport competitors, their service crews and families and officials that participation in or at motorsport events regularly, may result in hearing loss if protective devices are not utilized.
5. The vibrations that are present with the production of noise must not be disregarded as they may cause significant structural damage to both temporary and permanent structures.
6. Research has shown that, apart from hearing damage, prolonged exposure to a high noise level may also result in physical tiredness, irritability, and loss of concentration.

THE MEASUREMENT OF SOUND LEVELS AT MOTORSPORT EVENTS

It is compulsory for event organizers (regardless of the category of motorsport) to conduct sound level tests of competing vehicles and motorcycles. The driver/rider of any vehicle that fails a sound level test shall render himself/herself liable for the imposition of a penalty.

1. Each member club is duty bound to set upper limits of sound production for that category of motorsport. Where no limits are specified, use TABLE 1 (below) as guideline for maximum sound levels.
2. The calculation of total sound produced at the start line of a motorsport event is done as follows:

A single motorcycle or motor vehicle will produce a dB(A) reading. Each time the number of motorcycles or vehicles is doubled, the sound pressure measurement only increases by 3 dB(A).

EXAMPLE: 64 Motor vehicles are drawn up at the start line of an event. The sound measurement of one motorcycle is 80 dB(A). What is the total sound measurement for all 64 motorcycles?

- The first motor vehicle produces 80 dB (A)
 - The first 2 motor vehicle produce 83 dB (A).
 - The first 4 motor vehicle produce 86 dB (A).
 - The first 8 motor vehicle produce 89 dB (A).
 - The first 16 motor vehicle produce 92 dB (A).
 - The first 32 motor vehicle produce 95 dB (A).
 - The first 64 motor vehicle produce 98 dB (A).
3. The calculation for determining the reduction in sound pressure as one moves away from the sound source is defined as follows: Doubling of the distance from the source of the sound to the ear of the observer will result in a reduction of the sound pressure of 6 dB(A)

EXAMPLE:

- Sound measured at 8m registers 95 dB(A).
- Sound measured at 16m registers 89 dB(A).
- Sound measured at 32m registers 83 dB(A).
- Sound measured at 64m registers 77 dB(A).
- Sound measured at 128m register 71 dB(A).

SOUND ENERGY LOSS

1. There are various factors which will increase the rate at which sound energy is lost, thus reducing noise. They include:
 - a. Raised environmental temperature.
 - b. Altitude
 - c. Increased atmospheric humidity.

- d. Trees and foliage surrounding the venue.
- e. Uneven ground such as terraces, embankments, or hills, which will deflect sound.
- f. Large obstacle such as walls, buildings, or full parking areas of motor vehicles, which again will deflect sound.
- g. Sound loss is reduced in cold weather. Add 1 dB(A) for temperature under 10 °C and 2 dB(A) for temperatures under 0 °C.

VENUE SOUND

1. Sound systems utilized at venues may cause more irritation and inconvenience in the area surrounding a venue than the actual noise produced by the motorsport event. The following services must be monitored repeatedly the organizers:
2. The public address system for the competitor's service/pit area (if applicable) should be separate to that of the public areas. The sound produced should never exceed the hearing damage threshold level of 85 dB(A) when the sound is measured in a public area. The sound of the public address system should not exceed 3 dB(A), above the background sound levels, when measured at the closest residential property.
3. Ensure that the sound volume is reduced between practice sessions and races;
4. All loudspeakers and sound systems must be positioned in such a way that they are directed towards the ground and towards the centre of the venue or inside of the circuit.
5. Ensure that the sound level of the public address system is kept as low as possible;
6. Ensure that sound and public address systems are not utilized before or after times stipulated for the event;
7. The sound system must be tested and ready 30 minutes before the start of the first practice;
8. Should other entertainment be provided at the venue, ensure that the organizers adhere to this protocol.

CONCLUSION

1. The production of sound is inherent in competitive motorsport as well as in the recreational and transport use of motor vehicles.
2. The control of noise production is essential to not only prevent irritation in residential areas surrounding circuits and venues but also to prevent hearing loss in competitors and their service crews and families, officials, and spectators.

SOUND MEASUREMENT PROCEDURES

1. The measurement of sound levels for the for Categories are detailed below, Table 1 provides the decibel levels:

Category 1

The Measurement will be made by at 0.5m/50cm from the end of the exhaust pipe with the microphone at an angle of 45° with the exhaust outlet and at a height of 0.5m/50cm to 1.0m/100cm above the ground with engine running at 4,500 RPM

Category 2 and 3

The Measurement will be made by at 0.5m/50cm from the end of the exhaust pipe with the microphone at an angle of 45° with the exhaust outlet and at a height of 0.5m/50cm to 1.0m/100cm above the ground with engine running at 5,000 RPM.

Category 4

Measurements will be made with the microphone suspended over the track set at a height of 1.8m above the normal driving line at a point where the karts are at maximum power.

2. Where more than one exhaust outlet is present on the machine, the test must be repeated for each exhaust outlet and the highest reading will be the representative reading.
3. In circumstances where the exhaust outlet is not immediately available or accessible, the test may be conducted at 2 meters from the centreline of the vehicle with the microphone 1.2 meters above the ground.
4. The testing location will be selected to ensure there are no reflective objects such as walls, buildings, etc. with a 20m radius.
5. Background noise should be at least 10 dB(A) below the measured level with distances from 2-8 meters. It is necessary that there is a minimum of 20 meters radius open flat space around the vehicle. Where possible, measurements must be taken as close as possible to the vehicle, at the defined distance to avoid background noise.
6. It is generally impractical to take measurements over 8 meters as the background noise creates problems with accurate and consistent readings.

TABLE 1

SOUND LEVELS:

CATEGORY	50cms	2 Meters	8 Meters
Category 1 Stage Rallies, Speed Events, Road Rallies, Dexterity Challenge, 4x4 off-road trials and Auto Cross at 4500 RPM	108dB(A)	96 dB(A)	84 dB(A)

Category 2 Rally Cross and Rally Sprint at 5,000 R.P.M	108dB(A)	96 dB(A)	84 dB(A)
Category 3 Circuit and Drag Racing at closed venue facilities at 5,000 R.P.M.	114dB(A)	102 dB(A)	90 dB(A)
Category 4 Kart Racing per measurement guidelines 110 dB(A)			

Note: For events not listed the most stringent level will be used.

APPENDIX 2 - PROTECTION OF THE SOIL AND WATER SOURCES

At any location where motorcycles or motor vehicles participating in motorsport events have running engines, whether this is at a permanent circuit or temporary off - road venue, there is a risk of polluting substances being spilled and contaminating the atmosphere, the earth, ground water and possibly, ground water sources. This includes areas for servicing.

The substances which are hazardous to the environment fall into 2 major groups:

1. Natural or indigenous substances.
2. Artificial or man-made substances.

The hazardous man-made substances fall into 3 major groups:

1. The Heavy Metals - lead, cadmium, mercury, and their compounds.
2. The Chlorinated Hydrocarbons, including
 - Crop protection chemicals - D.D.T, Dieldrin and Aldrin
 - Solvents - Tri and Perchloro - Ethane.
 - Polychlorinated Biphenyls.
3. The Aromatic Hydrocarbons, including:
 - Solvents - Benzene, Toluene, Xylene
 - Polycyclic Aromatics - Naphthalene, Benzopyrene, Phenanthrene.

The toxic potential of a substance depends on:

1. The natural toxicity inherent in the substance
2. The buildup or accumulation of the substance in the environment.
3. The persistence or permanence of the substance in the environment.
4. The quantity or the concentration of the substance to which flora and fauna and man is exposed.
5. The length of time and recurrence of exposure during which absorption may occur.

Every attempt must be made to prevent the leakage of oil, fuel, cooling fluids, lubricants, etc from escaping as spillage onto or into the earth at ALL motorsport events.

The following facilities must be available and must be used by all competitors, service crews and officials:

1. Clearly identified and different containers or facilities must be available and used for the recovery of general rubbish, oil, detergents, water, cleaning rags, automotive liquid product containers.

2. Ensure that such containers are placed on a level concrete surface or a temporary stable platform.
3. The organizer must arrange for the detection, removal and disposal of contaminated soil, water, or other materials to an approved and acceptable site.

APPENDIX 3 - FUEL STORAGE & SAFETY

FUEL STORAGE

Containers used for the storage and transport of fuel, whether manufactured of plastic or metal, may not be left at the circuit or venues and may not be sold or given away.. They must be retained and removed by competitors and their service crews. Apart from the fire hazard, ingested petrol can produce a severe chemical pneumonia, which may be fatal in children.

FUEL SAFETY

1. The refuelling of vehicles and motorcycles requires the engine to have been switched off and in the case of motorcycles, and the rider to have dismounted.
2. No smoking in refuelling zone or within 10m of refuelling cars.

APPENDIX 4 - SANITARY FACILITIES

To ensure that adequate sanitary provisions are made for the estimated number of spectators attending the event. Consideration must be given to the location, access, construction, temporary facilities, lighting, and signage.

TOILETS

1. Toilets should be constructed and located in such a way that spectators are protected from bad weather and trip hazards. The floors, ramps and steps of all units must be stable and constructed with a non-slip surface: connecting pipes must be protected.
2. Toilets must be readily visible, lit and clearly identified at all parts of the venue.
3. Toilets must be regularly maintained, serviced, and repaired, by competent workers throughout the event to ensure that the toilets are safe, clean, and hygienic.
4. Toilets must be supplied regularly with toilet paper, which must be kept in a dispenser, or holder always.
5. All blocked toilets must be cleared urgently.

TOILET LOCATION

1. Toilets must be located at different points around the venue and not concentrated in specific areas, this will reduce crowding and queuing.
2. Consideration should be given to placing toilets outside the perimeter fenced venue area e.g. car parks, ticket office queuing areas.
3. Provision must be made for access to toilets for servicing and sewage removal.

TOILET TYPE

1. If temporary toilets are to be utilized, the different toilet types must be assessed as to their suitability for the type and duration of the event.
2. Peak toilet usage time should be assessed, rapid and constant use of any toilet may result in blockages and the toilet bowls may become unsanitary.
3. Single self-contained units are acceptable and easily relocated. They have a maximum number of uses before requiring servicing or emptying.
4. When non-mains units are used, provision for safe and hygienic removal of waste must be arranged, if necessary, with a holding tank.

TOILET NUMBERS

1. The number of toilets required for an event will depend on the nature and duration of the event, the audience profile and the venue of the event.
2. The calculation of toilet numbers requires an estimation of participant and spectator numbers and the anticipated male: female ratio. When this ratio cannot be estimated, it is acceptable to work on a ratio (male to female) of 50:50.
3. The following factors must be considered in attempting to estimate the minimum number of toilets required:
 - The duration of the event.
 - Perceived spectator food and fluid consumption.
 - Estimated toilet usage during breaks in the programme of events.
 - The provision of suitable facilities for children, the elderly and the infirm or disabled attending the event who may take longer to use the facility.
 - Toilet inside a fenced venue with a no re-admission policy.
 - Weather conditions and temperature.

EVENTS LONGER THAN 6 HOURS		EVENTS SHORTER THAN 6 HOURS	
<i>FEMALE</i>	<i>MALE</i>	<i>FEMALE</i>	<i>MALE</i>
1 Toilet per 100 females	1 Toilet per 500 males	1 toilet per 120 females	1 Toilet per 100 males

SANITARY PROVISION FOR PEOPLE WITH SPECIAL NEEDS

1. Appropriate sanitary accommodation must be provided for wheelchair users and other people with special needs.
2. Access to toilets must be considered. Supply fixed and stable ramps where appropriate.
3. Toilet facilities must be provided adjacent to areas set aside for spectators with special needs.
4. As a general rule, one toilet with hand washing facilities should be provided for every 75 people with special needs.

DISPOSAL OF SANITARY TOWELS AND NAPPIES

1. Sanitary towels or nappies may block sanitary facilities, therefore: clearly designated containers must be supplied for these articles. Arrangement must be made for the regular emptying of these containers.
2. If infants are expected, consideration must be given to providing baby changing facilities including receptacles for the hygienic disposal of nappies.

APPENDIX 5 - WASTE MANAGEMENT

Large quantities of waste will be generated at any event. Waste must be managed carefully to decrease the risk associated with its accumulation, collection, and final disposal.

1. Food and drink containers and wrapping. Paper and Cardboard
2. Leftover Food Debris, Waste Food from Catering Outlets.
3. Glass
4. Plastics
5. Metal Cans and other Metal Waste
6. Human Waste products
7. Medical Waste
8. Wastewater from toilets, showers, hand basins and food catering outlets.
9. Automotive Products like used tyres, used oil, empty fuel containers, cleaning rags.

WASTE HAZARDS

1. Injuries sustained by workers during collection and removal of waste.
2. Accumulations of waste, which may block emergency access routes or access routes around the venue.
3. Accidentally or purposely ignited waste creating a fire hazard to the entire venue.
4. The abuse of solid waste by spectators e.g. throwing of cans and bottles.
5. Vehicle movements on access roads within the venue collecting waste.
6. Waste attracting and breeding of insects and vermin.

WASTE GENERATION: AREAS AND TYPE

Waste generated and the type of waste generated will vary at different sites at the venue locations. The build-up of waste will similarly vary. This is of significance to the waste removal contractor as to scheduling times of waste removal

Special attention must be paid to the following areas:

1. Surrounding land and streets
2. Entrance and exists
3. Sanitary areas
4. Temporary or permanent medical centres
5. Catering areas
6. Parking areas
7. Entertainment areas
8. Pits

METHODS OF COLLECTION

Waste collection from venues may require a combination of the following processes:

1. The picking up of the litter and the emptying of receptacles.
2. Other lorries, towing vehicles, and trailers.

WASTE RECEPTACLES

1. Waste receptacles may be placed around the periphery of the venue or site, within the venue or in other appropriate areas.
2. Care must be exercised in the choice, size and location of receptacles.
3. Wheeled or similar containers are currently the most versatile. They are equipped with lids. They are easily positioned and maneuverer.
4. Steel drums, when full, are difficult to empty and manoeuvre. They serve as an attraction for bees and flies.
5. Skips may be utilized but correct site planning is important for delivery and collection access, particularly in bad weather. They should be located distant to spectators. They are a fire hazard and require frequent monitoring.

COLLECTION TIMES

Collection times must be scheduled with the waste contractor for before, during and after the event.

WASTE SEGREGATION

Segregation of waste can be undertaken on site by the provision of different containers for specific waste e.g. glass, cans, plastic. The effectiveness of such schemes is dependent on the willingness of competitors and spectators to use the available containers for their waste.

Notes:

- This environmental code has been developed with special thanks to Automobile and Touring Club of Nigeria.
- This environmental code should be aligned with local government laws and guidelines. This can be accomplished by working with the respective government agencies.
- Elements can be added to outline specific environmental actions and activities undertaken by the Barbados Motoring Federation.
- This is designed as an environmental code for guidance.