

**2016-2019**

# World Road Association Strategic Plan

***Version  
November 2015***



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**Table of Contents**

Foreword by the President .....

Executive Summary .....

Introduction to the World Road Association

    Organizational Structure .....

    Vision .....

    Mission .....

Strategic Direction

    Changes in Operating Context .....

    The Association’s Response .....

        Strategic Activities

        Strategic Communication

Plan of Activities

    Technical Working Structures .....

    Technical Agenda .....

        Strategic Theme A .....

        Strategic Theme B .....

        Strategic Theme C .....

        Strategic Theme D .....

        Strategic Theme E .....

Organizational Goals

    Goal 1: Management and Operation of the World Road Association .....

    Goal 2: Cooperation with International and Regional Organizations .....

    Goal 3: Congress Management .....

    Goal 4: Activity and Visibility at the National Level .....

    Goal 5: Knowledge Sharing and Exchange Policy .....

    Goal 6: Communications with Members and Outside Groups .....

    Goal 7: Publications and Products .....

    Goal 8: Financial Management .....

    Goal 9: Strategic Planning .....

## Foreword by the President

To fulfill its mission as worldwide leader in the analysis and discussion of relevant issues in roads and road transportation, as well as in identifying, developing and disseminating international best practices related to them, every four years the World Road Association prepares a Strategic Plan to structure, develop, follow up and evaluate its activities during the four-year working cycle.

The sixth Strategic Plan of the World Road Association, which covers the period 2016-2019, is a document of utmost importance. Just as with previous plans, this Plan does not only describe the Association's mission, vision and objectives, but it also identifies the road sector's most relevant current and future topics. It also proposes the working structure that will serve the Association to address them and produce information and documents that will help it to provide service to road communities in its member countries.

The World Road Association's Strategic Plan for 2016-2019 has been prepared under the leadership of the Strategic Planning Commission and has benefitted from wide-ranging international participation. The preparation of the Plan started with an analysis of the road sector's current working environment in most countries of the world and an identification of the main budgetary, institutional, technological, environmental and service-related issues that influence the way in which roads operate and the services they provide. Today, these issues generate challenges that require effective responses from the Association to maintain its worldwide leadership in the production and exchange of road-related information and knowledge.

The preparation of the Strategic Plan included ample consultations. The First Delegates of all member countries, Technical Committee and Task Force Chairs and Secretaries, Strategic Theme Coordinators and all the National Committees were invited to provide inputs to the process. In addition, interviews with representatives from road and road transport related external organizations helped to obtain their ideas and viewpoints. A special effort was also made to consult representatives from developing countries to ensure that their needs and viewpoints were incorporated into the final version of the Plan.

To ensure the continuity of the Association's main activities, the Strategic Plan for 2016-2019 has adopted a structure that is very similar to that of the previous Plan. It includes three Commissions (Strategic Planning, Communications and Finance), five Strategic Themes (Management and Finance, Access and Mobility, Safety, Infrastructure, and Climate Change, Environment and Disasters) that incorporate 18 Technical Committees and four Task Forces. In each case it establishes functions, topics to be addressed and expected results. However, the Plan also introduces some innovations with respect to previous cycles:

- The Plan strengthens the Association's capabilities to maintain and update several of its more successful products, such as the Road Safety Manual, the Winter Road Congress and the outputs of the Technical Committee on Tunnel Operations.
- Task Forces are allowed more flexibility to do their work in two-year activity cycles, in order to increase their capabilities to cover new topics and analyze their future relevance for roads.
- Special Projects are explicitly recognized as powerful tools to address relevant topics and produce, in short periods of time, useful reports and information for member countries.
- Regional Task Forces are created to address topics of particular interest to certain regions, especially those with many developing countries.

The structure of the new Strategic Plan is reinforced with the creation of a new, high level group to identify emerging topics in the international agenda of roads and road transportation. It also places increasing emphasis in communicating and disseminating the Association's activities and products, both to the membership as to other professional groups.

Improving the Association's communications capabilities has been recognized as one of the most important tasks for the coming work cycle. Therefore, the Plan stresses the dissemination of its activities and products through the implementation of new internal capabilities and taking advantage of the potential, speed and outreach of modern technologies.

The depth of the effort that was accomplished to prepare this Strategic Plan reveals the vitality of our Association and especially the interest, commitment and professional quality of all those who participated in its inception. I express my deepest gratitude to them all. I am convinced that this document will be very valuable to lead the World Road Association during the 2016-2019 work cycle and consequently to help it consolidate and enhance its position as international leader in the exchange of knowledge and information on roads and road transport.

Oscar de Buen Richkarday  
President,  
World Road Association

## Executive Summary

The World Road Association is a non-profit association established more than 100 years ago to promote international cooperation on issues pertaining to roads and road transportation. It consists of a wide range of members from every part of the globe. The core members are road agencies representing over 120 countries.

The Association mobilizes the expertise its members to share and develop information for the benefit of the global transportation community, a mission that is grounded in the needs of member countries and supportive of larger trends in global society. It fulfils this mission through operations guided by a 4-year Strategic Plan. This plan, which covers the years 2016-2019, is the result of a deliberative process that included: (1) an assessment of the core mission of the Association; (2) an assessment of the external environment; and (3) consideration of key internal dynamics and member needs.

The Strategic Plan confirms the goal of the Association to remain a leading international venue for creating and transferring knowledge in the road transport sector. To this end, it organizes the efforts in the 2016-2019 working cycle around themes of *responsiveness* and *reach*. This means directing its attention to topics that are of confirmed interest to its membership, so that its products can offer high technical value. Alongside the identification of a meaningful technical agenda is a recognized need to make the Association's work more visible, and to ensure it easily reaches intended audiences. The plan calls upon working methods that have proven their effectiveness throughout the history of the Association. It also introduces amended or novel ways of working to enable the Association to provide information more timely and in a wider variety of formats in the context of today's environment.

The demands of the current environment have also given rise to a new emphasis in the 2016-2019 work cycle, namely a focus on strategic communication. The Association, with its ability to access a unique reserve of expertise, will invigorate its efforts to ensure that its products and knowledge are distributed to intended audiences by better accessing communications expertise and making the effective dissemination of information as important a goal as its production.

The substantive agenda for the 4-year cycle will be organized into 5 strategic themes: Management and Finance; Access and Mobility; Safety; Infrastructure; and Climate Change, Environment and Disasters. These represent a continuation of several lines of traditional work within the Association, with an elevation of environment-related issues based on this emerging as a key concern within the membership.

Through Technical Committees, the Association will explore a range of issues within these themes. Some committees represent longer-term investments of attention, and will be called upon to look at their work as multi-cycle efforts. In addition, the Strategic Plan makes use of several Task Forces, with more time limited and smaller mandates to foster the exploration of critical issues. Regional Task Groups and Special Projects will complement the familiar structure, and enable the Association to engage external partners to develop meaningful products.

The 2016-2019 Strategic Plan continues a course of modernization for the organization, preserving the strengths of the traditional working methods that have served well for decades and introducing novel structures and processes to enable timely responses for the broadest possible segment of the membership. Woven into the production effort is a deliberate focus on communication. The results are expected to be a work cycle that enables the global road transportation sector to benefit from access to best practice, collaboration of experts to develop new knowledge in key areas, and confirmation of the World Road Association's value as the leading forum for advancing road transportation issues globally.

## Introduction to the World Road Association

The World Road Association is a non-profit association established in 1909 as the Permanent International Association of Road Congresses. Its broad aim over its more than 100 year history has been to promote international cooperation on issues related to roads and road transport.

The World Road Association is principally a forum bringing together governments from all over the world. As of November 2014, the Association has 122 national member governments representing all levels of economic development and every region of the world. In addition to national governments, the World Road Association includes regional authorities, collective members, and individual members. Together, the members represent a wide range of experiences, skills, and interests. Even in such diversity, however, the members have in common an interest in improving the state of roads and transportation worldwide.

### *Organizational Structure*

**The Council** of the World Road Association has the ultimate responsibility for the governance of the organization. It is composed of delegations from member countries, each led by a First Delegate. The Council elects the President, the Vice-Presidents, the Secretary General and the members of the Executive Committee. The Council meets once each year.

**The Executive Committee** is responsible for the administration of the Association in accordance with policies approved by the Council. It is supported by the Commissions (Strategic Planning, Finance and Communications) and the General Secretariat, and will be provided additional ideas by an Advisory Group on Emerging Issues.

**The General Secretariat** is located in Paris. It ensures the daily management of the Association in accordance with the resolutions and decisions of the Council and of the Executive Committee. It also provides a secretarial service for the Council, the Executive Committee and the Commissions and services to the Technical Committees. The General Secretariat is responsible for the Association's website, and for editing of the *Routes/Roads* magazine and various publications. It provides assistance in the planning and preparation of World Road Congresses and International Winter Road Congresses.

**National Committees** operating in 38 member countries (as of April 2015) contribute to the dissemination of the Association's outputs, organize local activities such as meetings, conferences and seminars, and undertake some membership services and administration duties in their own countries.

**The technical work of the World Road Association**, which is described in the Technical Agenda section of this document, has been divided into five Strategic Themes. Under these themes are 18 Technical Committees and 4 Task Forces that work on various subjects in the road and transport field. They are made up of skilled volunteers from member countries who work together to generate the information products and knowledge sharing events that constitute the Association's core activity.

In addition, the Committee on Terminology works directly under the supervision of the General Secretariat.

**As needed and feasible, the Association will work with other entities to establish regional task groups** to address focused issues of relevance to particular subsets of the Association's membership.

### *Vision*

Taking into account its broad membership and geographic diversity, the vision of the World Road Association is to become “the world leader in the exchange of knowledge on roads and road transport policy and practices within the context of integrated, sustainable transport.”

### *Mission*

Closely related to this vision is an organizational mission that speaks to how the Association will position itself to accomplish its long term goal of global leadership in the sharing of expertise and information related to transportation. The mission of the World Road Association is to serve all its members by:

- being a leading international forum for analysis and discussion of the full spectrum of transport issues related to roads and related transport;
- identifying, developing, and disseminating best practice and giving better access to international information;
- fully considering within its activities the needs of developing countries and countries in transition; and
- designing, producing, and promoting efficient tools for decision making on matters related to roads and related transport.

This vision, along with the processes described in the mission, is consistent with the Association’s long history of facilitating the development and sharing of road-related knowledge. At the same time, the approaches that the Association must take to realize its vision are forced to evolve as the needs and number of members have grown, and as conditions outside the road sector have changed.

## **World Road Association's Strategic Direction**

### ***Changes in the Operating Context***

The World Road Association must take into account the needs of a diverse body of members. While national road agencies remain the primary constituency, a growing number of national committees and interest in the Association by other sub-national authorities have created a more inclusive, but more complex, membership profile.

The unifying interest of these members is a desire to access knowledge that can improve roads and road transportation: knowledge that can be applied in their respective jurisdictions with the combined effect of improving the state of the practice worldwide. The greater mix of backgrounds, experiences, and needs, however, has required that the Association consider its internal workings to ensure that it can be effective in its mission and responsive to its members.

At the same time, the external environment in which the World Road Association now operates has become increasingly complex. These complexities include changes in the natural environment, economic conditions, and demographics.

With respect to the environment, countries are recognizing and developing strategies to address changes in climate and weather patterns. Of increasing significance to the transportation community are the effects on infrastructure, leading to questions of how to mitigate negative impacts and how best to adapt roads to extreme or highly variable weather. The answers to these questions lie in a number of disciplines, including planning and design, materials, emergency response, investment, and others.

Economically, while there remain differing levels of development in various regions of the world, many member countries have experienced at least some measure of positive change. With higher levels of economic development often come greater demands for mobility. Engagement in international trade and the diversification of job types lead to more need to move people and goods over land.

While the aforementioned relative changes in the economic circumstance of many countries create some novel and perhaps more urgent challenges, the Association is in the position of having a membership that, in absolute terms, represents a wide spectrum of development levels and capabilities. Attention to low and middle income countries remains an important consideration. The need to recognize the changing nature of transportation challenges in various countries is thus combined with a need to understand and be able to offer solutions that are responsive to a broad range of conditions.

Finally, population patterns also have seen important changes. Urbanization is a phenomenon that has impacted a number of countries, bringing with it a new set of challenges and acute concerns. Based on these and other changes in the international environment, there is broad recognition that the efficiency of movement via roads is critical to economic success and quality of life. This appreciation, however, is not always matched by capacity to effect the needed improvements.

In addition to these changes in road transportation conditions worldwide, the Association also sees changes in the manner in which governments respond.

One such change relates to differences in road administrations. In some cases, the mandate of road administrations is changing. Instead of the traditional focus on engineering and construction, some agencies are moving toward more general administration. A government sector that long has been the province of technical experts making decisions grounded in transportation-specific disciplines has

become, in some respects, less technical and more open as the relationship between roads and society at-large is more widely understood. Politicians and others not trained in the technical aspects of transportation are becoming more present in road administrations as decision makers, bringing with them a different set of interests and expectations.

Agencies that are more focused on management of the road system rather than building it may see changes in their staff composition, with fewer technicians and more generalists. In some organizations, this is part of more fundamental changes in their structure, in which road concerns are treated within the broader rubric of transportation authorities – and questions of road management are addressed by staff with responsibility for multiple modes and disciplines. In addition, as the public sector role in the technical aspects of road management lessens in some instances, additional space has opened for the private sector to play an important role. Helping countries navigate through the process of greater inclusion by the private sector, and to address the funding and financing mechanisms that are often at the core of this involvement, is an area to which greater attention is warranted.

As conditions change within individual governments, so does the historical familiarity with the World Road Association and interest in its technically-oriented products. The Association therefore faces a need to consider different perspectives within its member constituency, including the potential need for products that are accessible to users beyond the specialists who have traditionally been the principal consumers of its work.

Alongside this evolution in audience is a broader evolution in the way in which people receive information. Technology has enabled increasingly rapid access to information and the ability to consult several sources simultaneously. The richness and speed of the environment, and the expectations on the part of consumers that they engender, impose significantly greater demands on organizations that produce information. For the World Road Association this means broadening its focus from just questions of product sufficiency to issues of better accessibility and timeliness. This effect is exacerbated by the presence of other research products – from academia, other international groups, etc. -- that may be released more quickly or garner more attention, and may offer alternative views. Such cases can create uncertainty regarding the continued value added of the Association. Particularly as one considers that differences in methods for gathering and using information will continue to change with generational shift, the Association needs to ensure it is able to attract and maintain as members the young professionals who will constitute tomorrow's global road specialist community.

### *The Association's Response*

At its most senior levels, the World Road Association has considered how this strategic plan can reflect the needs of the global roads community, both in terms of the substantive issues warranting consideration and the real-world priorities and work methods of road agencies in its member countries.

In general terms, the Association's strategy emphasizes two key aspects: responsiveness and reach. **Responsiveness** refers to the selection and pursuit of topics and working formats that provide unquestioned value to the Association's constituency. **Reach** refers to a renewed emphasis on communications, embedding it as an important issue at all levels of the organization, to better ensure that the information the Association produces serves its purpose with desired audiences.

The specific approaches for the 2016-2019 work cycle are described below.

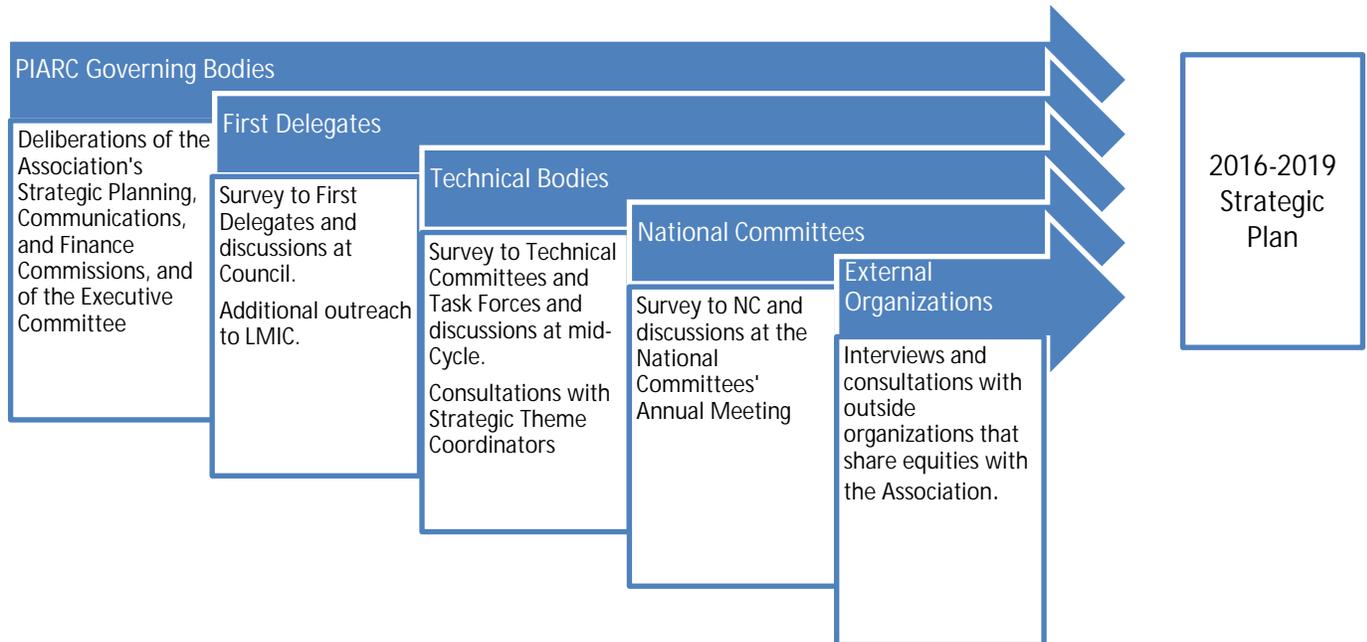
*Responsiveness: Strategic Activities*

The process to identify the strategic activities for the work cycle has been oriented around several key objectives, which came into focus in the course of executive deliberations within the organization. In this context, there was a recognized need to capitalize on the established strengths of the Association while introducing innovations that would ensure greater responsiveness and continuing relevance given the aforementioned changes in the environment and expectations within the stakeholder community. Thus, the key goals in developing the substantive work were:

1. To maintain a manageable framework, taking into account feedback from the political directorate and the Association’s technical experts;
2. To articulate priorities while providing some degree of flexibility to adjust given the likelihood of change within the 4-year cycle;
3. To encourage the generation of information products on a more continuous basis;
4. To promote a more effective transition from the preceding cycle; and
5. To emphasize the cultivation of strategic alliances with outside organizations.

With respect to the first goal, the substantive agenda presented in this Strategic Plan is the result of a comprehensive review of stakeholder input. This solicitation of ideas included First Delegates, National Committees, those involved in the current technical work, as well as individuals from external organizations. This comprehensive information collection process was designed to approach the Association’s constituents to weigh in on the critical question of what topics the Association should examine.

Soliciting input from the Technical Committees themselves also enabled the Association to consider how to link the work of this strategic plan with that performed during the preceding cycle. This internal feedback also permitted the leadership of the Association to consider the question of what level of output could be expected based on available resources and its unique access to experts.



Also emerging from these responses – of relevance to the second goal – have been indications of priority and urgency. Among these are perennial concerns, such as improvement of road safety, which has enjoyed increased political attention as a result of the United Nations Decade of Action and its associated drive to reduce road-related fatalities around the world. There are also emerging concerns, such as those linked to improving road systems' response to significant environmental change. Along with priorities came an observation from past years that conditions change even during a single cycle, and the Association has to be nimble enough to respond to key issues that might arise without prejudice to its technical working structure. The value of having some degree of flexibility in response has been recognized and incorporated into the strategic plan.

Closely linked with the idea of greater flexibility is a push to have the Association produce information on a more continual basis. While the value of the quadrennial World Road Congresses is well recognized as a means to showcase the full breadth of the Association's expertise, the concerns of its stakeholders at both the management and practitioner level are constant – as is the need for access to information to resolve concerns. Structuring work processes within the organization to foster the completion of reports and other resources more frequently has the benefit of ensuring that the Association can provide more current information in a timeframe that makes it more useable for its members.

Another aspect of the Association's approach is a deliberate effort to focus on how transitions are conducted between cycles. As has been the case with other strategic plans, the issues that the Association needs to give attention are long-term, meaning in some cases that the efforts to be undertaken are a continuation of already established work. In some other cases, the work might be novel, but is expected to require more than four years. Both cases call for mechanisms to effect transfers of knowledge and, thus, better ensure consistency of effort and continuity in the quality of the Association's products.

Finally, the strategic activities for this cycle include emphasis on cultivating alliances with related organizations. This principle has appeared in a number of past strategic plans, and remains important as the Association seeks to combine its unique capacities with those of complementary organizations to generate the best possible products for its membership.

#### *Reach: Strategic Communication*

Knowledge sharing is at the core of the World Road Association's mission. Over the past 20 years, with the advent and rapid development of internet and associated technologies, knowledge sharing has undergone a revolution. Technology has changed as have the needs and expectations of the Association's target audiences. To remain relevant and viable, it must demonstrate value added to current members and pursue opportunities to widen and better engage the membership.

Part of the communications effort relies on continuing on an improvement course to which it has committed with respect to its use of technology. In recent years, electronic information sharing, using the website as the core tool and repository, has become the principal method used by the Association disseminate information. The website is supplemented by the *Routes/Roads* magazine, emails to members, various newsletters, fact sheets, marketing materials, information sharing at events and a variety of other ad hoc communications activities. However, most of the materials of the Association are aimed at driving interested individuals to the website and the publications and products it makes available for download.

This has served the Association well over the years; however, individuals expect that information will come to their attention more directly. Thus, while organizations must maintain a repository of information, they must also adopt a more dynamic approach to information sharing: information must be

continually updated; experts must be offered opportunities to engage in dialogue on existing and emerging issues; and the use of interactive multimedia tools should be routine.

Taking due account of its recent work and acknowledging current demands, the Association will employ measures during the 2016-2019 plan cycle to communicate in ways that are consistent with the needs of the community it serves. The Association will continue its move toward increased use of social media with a focus on LinkedIn, launching an interactive version of the *Routes/Roads* magazine, and developing marketing plans for key information products.

Additionally, the Association has consciously set the structure and operation of its technical bodies to better enable the generation of more frequent content. Employment of the Task Force construct, a key feature of which is the completion of discrete assignments within two years, is one example of how the structure is designed to promote timely information. Continuation of Special Projects as a facility to pursue important topics outside the strict framework of technical bodies for reporting to the membership is another example. Within the Technical Committees themselves there will be greater emphasis on communicating its work in conjunction with all of its meetings, not just international seminars. To this end, the Technical Committees will be vested with greater responsibility for developing content for external audiences, and for working with the General Secretariat to effectively move it into channels appropriate to the Association's information sharing mission and visibility goals.

# World Road Association’s Plan of Activities

## *The Technical Working Structures*

The breadth of the issues that fall within the field of expertise of the World Road Association, the diversity of its constituency, and the complexity of the environment in which it operates have all been factors in determining the working methods that will be employed to achieve the goals of this Strategic Plan. To operate in a manner consistent with its strategic direction, the Association must identify a worthwhile agenda of topics as well as the means to explore them for the benefit of its membership and the global transport community more broadly. To this end, this strategic plan employs several distinct working methods, drawing from both decades of successful practice and suggestions grounded in observation of current conditions.

At a managerial level, the Association will continue to rely on its Council and Executive Committee to set the substantive agenda of issues to be pursued and to administer the resources necessary to ensure that appropriate provisions are made to support this work. In addition, these governing bodies will be responsible for ensuring that suitable progress is made based on the expectations set in this strategic plan.

At the technical level, the Association will organize its efforts into **strategic themes**, continuing a structure used in prior work cycles. The strategic themes bring together related technical bodies to facilitate communication among the leaders of these groups, encourage linkages and cooperation, and ensure consistent oversight and guidance through Strategic Theme Coordinators. These individuals serve as links between the technical and executive levels of the organization. Their organizational placement also enables them to identify potential connections across the themes, enabling the Association to make better use of expertise found in the full range of groups performing its technical work.

For the 2016-2019 cycle, there will be five strategic themes:

- Management and Finance
- Access and Mobility
- Safety
- Infrastructure
- Climate Change, Environment and Disasters

These themes represent a continuation of work that remains at the core of road administrations’ interest as well as the emergence of concerns about how to address the need of road infrastructure to withstand conditions imposed by short-lived extreme weather events and changes in long-term weather patterns.

Within each of these themes are a total of 18 Technical Committees and 4 Task Forces.

Management and Finance	Access and Mobility	Safety	Infrastructure	Climate Change, Environment and Disasters
<b>Technical Committees</b>				
Terminology*				
	Road Network Operations/ITS*  Winter Service*	National Road Safety Policies and Programs *	Road Tunnel Operations*  Asset Management*	

Performance of Transport Administrations	Sustainable Multimodality in Urban Areas	Design and Operations of safer Road Infrastructure	Pavements	Adaptation Strategies/Resiliency
Road Transport System Economics and Social Development	Freight		Bridges	Environment Considerations in Road Projects & Ops
Risk Management			Rural Roads and Earthworks	Disaster Management
<b>Task Forces</b>				
Innovative Financing	Road Design & Infrastructure for Innovative Transport Solutions	Infrastructure Security		
Coordination between National and Sub-National Authorities				
<b>Regional Task Groups</b>				
Geometric and Structural Design Standards for African Highway Network				
Updating of Standards for Rural Roads				

\*Indicates a multi-cycle Technical Committee.

**Technical Committees**, which have been the mainstay of the Association’s work for decades, remain the principal medium for study and development of knowledge products. Constituted for the full four years, these Committees execute work plans based on the parameters set by this Strategic Plan. Included in this is responsibility for convening international seminars as a mechanism for sharing information.

Different from past cycles, however, the construct has been refined to reflect requirements stemming from the Association’s deliberate investment in a number of higher order information resources that are designed to be delivered and supported over multiple 4-year cycles. Examples include the quadrennial Winter Road Congress, the Road Safety Manual, and the highly specialized work related to tunnels. The Association has developed methods to support the Technical Committees responsible for such issues so that they can maintain the continuity of their efforts. In addition, Technical Committee mandates have been adjusted generally to take into account demands from members for more timely and user friendly information.

As part of its seeking to employ more flexible methods, this Strategic Plan builds on a concept introduced in the 2012-2015 cycle: the **Task Force**. Based on the benefits offered by the construct, this plan establishes more Task Forces. These groups are similar to Technical Committees in that they bring together experts to produce specific products for the Association, although in some cases they will focus on accessing experts outside the traditional member community. They mainly differ in that their mandates are more limited and their efforts intended to conclude within two years, which forces streamlined working approaches. They also differ in the manner in which members are recruited as well as their size. With respect to membership, focused recruitment enables the Association to call upon individuals possessing the specialized expertise needed based on the Task Force’s mandate. Maintaining reasonably small groups facilitate decision-making and administration in the context of the groups’ time constraint.

Another facility employed by the Association under this Strategic Plan is the **Special Project**. An innovation introduced in the preceding work cycle, Special Projects enable the organization to outsource the development of high-level, short documents that respond to critical issues identified by members and that are not within the near-term capacity of the Technical Committees or Task Forces to complete. These Special Projects are overseen by the General Secretariat and the Technical Committee housing the most related expertise, so final products can represent the views of the Association. Nonetheless, the facility enables the organization to engage on important topics beyond what is contemplated in the work plans of its established technical bodies. Thus, Special Projects are a mechanism that allows the World Road Association to maintain greater visibility and provide additional intellectual value on key issues throughout the work cycle.

To support the identification and analysis of novel topics warranting attention by the Association, the Executive Committee will establish an **Advisory Group on Emerging Issues**. Consisting of a diverse group of experts with deep expertise and experience, this body will offer recommendations for study or projects it believes important for the Association to undertake, but which might be outside the established technical agenda.

**Regional Task Groups** will be employed as a working structure in the 2016-2019 cycle. These groups have their origin in a longstanding challenge faced by the Association: how to adequately address the needs of low and middle income country members. It is a structure informed by experience in the past work cycle, where regional groups were established in connection with specific Technical Committees. Learning from that pilot effort, the Regional Task Groups will focus on issues that low and middle income member countries deem to be critical, but that might not be directly or readily addressed by the Association's main technical bodies. The Association will formulate the terms of reference for Regional Task Groups in conjunction with specific regional organizations, a process that should help identify the most suitable topics for such an undertaking and formally leverage the resources of established regional associations. The World Road Association will also actively seek to engage international development institutions for both technical support and consideration of the resulting information products in the context of funded aid projects related to roads and transportation in the relevant region.

Initially, this construct will be used to address at least two topics in the cycle: Design Standards for the African Highway Network and Updating Design Standards for Rural Roads. These efforts will depend on the receptivity of appropriate regional organizations to lead these efforts with support from the Association. Other topics might become the foundation for additional Regional Task Groups, at the discretion of the Association's management bodies and with the leadership of other regional entities.

Finally, the Association will maintain a structure it has adopted during annual Council meetings to enable the collection and discussion of information on key topics. This practice is the **conference debate**: an established time for facilitated presentation and discussion based on an issue selected by the Executive Committee. As a substantial time allotment within each Council meeting, these sessions provide an opportunity each year to showcase national experiences or spur discussion on topics that are of particular import to members. In so doing, these sessions take advantage of the unique forum the Council represents and, through the presentations that they yield, offer leaders information and references that can support policy and practice enhancements in their respective countries. While historically an internal consultative mechanism, these sessions generate a substantial amount of information. As such, it is an important resource that can respond to members' information needs through the broader sharing of presentation materials and summaries of the associated discussions.

These working methods reflect a continuation of strong corporate management and effective technical pursuits. They remain founded on structured groups and work plans based on a broad Association vision, but incorporate newer practices that are sensitive to the evolving needs of the membership.

### *The Communications Approach*

Treating the issue of strategic communication as a core function represents a novel approach by the Association in this strategic plan. Consistent with this elevation in attention to communication issues, the next work cycle will employ specific approaches to accomplish the goals of more timely information to members and greater visibility for the Association overall.

Several themes will guide the communication efforts during the 2016-2019 work cycle. These are:

- Strategic alliances – pursuing and establishing relationships between the Association with key partner organizations;
- Membership expansion – increasing the reach of the organization by engaging young professionals, sub-national governments, language communities, and other professional groups;
- Information sharing – efforts to improve the timeliness and quality of information to various audiences, including technological and linguistic considerations;
- Effective internal communication – improving processes to enhance the efficiency of operations and management of the Association; and
- Reputational integrity – incorporating risk assessment and mitigation processes into the workings of the organization as it becomes more visible.

Supporting these themes will be an effort undertaken by the Association's technical bodies, its management bodies, and the General Secretariat. The theme of information sharing will be pursued in large measure by the Technical Committees and Task Forces. Responsibility for ensuring the effective use of social media and other communications tools will be vested in the Chairs. While directly accountable for this function, the Chairs may choose to rely on others to generate content based on their group work. To ensure that Chairs have support for these new functions, the Association will employ guidance addressing: roles and responsibilities; the minimum standard for products, including format; as well as where and how to post material to ensure it reaches desired audiences.

The General Secretariat will devote resources to support this new communications approach through the engagement of a Strategic Communications Advisor. This individual will provide ongoing, senior-level strategic advice. The advisor will also develop and implement communications activities and undertake the associated risk assessment. In so doing, the General Secretariat will actively contribute to both information sharing, membership expansion, and reputational integrity – in addition to its traditional role in fostering clear internal communication.

The management of the Association is also intended to play an important role in enhancing communications. The pursuit of strategic alliances with appropriate external organizations will rely on the engagement of leaders. As the substantive agenda for the work cycle unfolds, management oversight will necessarily include an evaluation of communications effectiveness, so the continuing attention of Association leadership will also be key to realizing the intended increase in information sharing, more effective internal workings, and preserving reputational integrity.

This increased attention along with the establishment of enabling resources are intended to translate the recognition that communication is a critical interest of the Association into a set of actions that help create

a more visible organization that delivers on its promise to put meaningful information on the roads sector into the hands of its varied global constituency.

### ***The Technical Agenda***

This section of the Strategic Plan consists of a description of the five Strategic Themes, as well as the subordinate Technical Committees and Task Forces. For each of the technical bodies, the plan outlines issues, related strategies, and potential outputs to guide the groups once constituted.

## **Strategic Theme A: Management and Finance**

### **Goal**

The goal of this Strategic Theme is to encourage the development of policies and strategies that result in transport administrations that perform well, measure performance, and incorporate innovative financing mechanisms to meet the ever changing needs of the road transportation community. It is intended to provide examples of good governance, performance management, evaluation methods, and showcase the efforts of transport administrations that consider and manage risk and incorporate knowledge transfer strategies between agencies operating at different levels of government.

### **Overview**

The Strategic Theme for Management and Finance will include three (3) Technical Committees and two (2) Task Forces. Strategic Theme A brings together matters related to the policies and strategies that transport administrations develop and enact.

Funding limitations and competition for resources require that road administrations implement practices and tools to measure performance in support of investment and policy decisions. Measuring performance of road administrations reflects such new structures and increased stakeholder influence and media scrutiny increase the importance of good governance and effective anti-corruption measures remain of paramount importance. **Technical Committee A.1 (Performance of Transport Administrations)** will develop guidance on these issues based on the experience of member countries at different stages of development.

Investment in roads can create substantial social and economic benefits and improvements to quality of life. Incorporating these benefits into the appraisal process is of great assistance to decision-makers in setting priorities for limited available resources. **Technical Committee A.2 (Road Transport System Economics and Social Development)** will investigate new developments in this arena alongside methods of ex-post project monitoring that will capture how results are used.

Risk assessment and management is fundamental to the undertakings of transport organizations. **Technical Committee A.3 (Risk Management)** will focus on the role of risk assessment and allocation at both the organizational and project-based levels.

As funding sources have not always kept pace with investment needs, road organizations have sought ways to identify innovative finance tools to facilitate project delivery. Tolls, user fees, and other project-based revenue sources, in combination with new finance mechanisms, can substantially increase governments' ability to deliver road projects. These issues are to be studied in **Task Force A1 (Innovative Financing)**.

In many countries, effective management of the road network depends on a coordinated effort between national and local organizations. Active partnerships can be a conduit to deliver training and information that may not have otherwise be accessible to the full community of practitioners. **Task Force A.2 (Coordination between National and Sub-National authorities)** will look at successful practices at countries in different development stages.

### **Technical Committees:**

- A.1 Performance of Transport Administrations
- A.2 Road Transport System Economics and Social Development
- A.3 Risk Management

### **Task Forces:**

- TF A.1 Innovative Financing
- TF A.2 Coordination between National and Sub-National authorities

## TC A.1 Performance of Transport Administrations

Issue A.1.1 Framework on measuring effectiveness and efficiency of transport administrations	
<i>Strategies</i>	<i>Outputs</i>
Define concepts and measures used in establishing a strategic approach to achieving performance goals including the use of information collected to make investment and policy decisions.	Report and recommendations based on case studies, where appropriate, adopted by countries at different development stages illustrating established framework.
Issue A.1.2 Evaluating the transformation of transport administrations	
<i>Strategies</i>	<i>Outputs</i>
Review of major changes undergone in the transportation administrations and benefits and challenges associated with implementation of these including: review of management of multi-modal transportation systems and assessment of the impact of client-based approach	Report and case studies, where appropriate, adopted by countries at different development stages illustrating the evolution, listing benefits, and enumerating challenges and how these were addressed.
Issue A.1.3 Good governance and anti-corruption and response measures	
<i>Strategies</i>	<i>Outputs</i>
Continue the work performed over the last two cycles and investigate the implementation of anti-corruption and response measures in road organizations in relation to: <ul style="list-style-type: none"> <li>- Internal controls (prevention)/institutional constructs</li> <li>- Reaction to problems</li> <li>- Audit practices</li> </ul>	Report based on case studies and workshop presentations and discussions;  Link to external organizations that have looked at the issues.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

## TC A.2 – Road Transport System Economics and Social Development

Issue A.2.1 Project evaluation methods	
<i>Strategies</i>	<i>Outputs</i>
<p>Investigate travel time savings by focusing on reliability as an evaluation method.</p> <p>Investigate the broader impact of road investments in developing countries with a focus on employment effects.</p>	<p>State-of-the-practice report on the methodologies, complemented by case studies from a range of member countries.</p>
Issue A.2.2 Ex-post evaluation of projects	
<i>Strategies</i>	<i>Outputs</i>
<p>Investigate and document how ex-post evaluations are conducted after completion of a road project (new projects and rehabilitation) and how results of the evaluations are used.</p>	<p>State-of-the-practice report on the methodologies, complemented by case studies from a range of member countries.</p>
Issue A.2.3 Special Project on capturing the contributions of road transportation	
<i>Strategies</i>	<i>Outputs</i>
<p>Craft the terms of reference needed for a request for proposal on a Special Project to identify, investigate and capture the contributions of road transportation towards sustainability and economic development to support decision-makers, including the assessment and management of socioeconomic externalities such as changes in demographics.</p> <p>Once a proposal is selected, manage the project and serve as liaison with the General Secretariat for final delivery and dissemination.</p>	<p>Terms of reference to support a Call for Proposals on a Special Project.</p>

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle

## TC A.3 – Risk Management

<b>Issue A.3.1</b> Evaluation of organizational approaches to risk	
<i>Strategies</i>	<i>Outputs</i>
Identify, investigate and document evaluation of non-conventional and innovative methods and tools used in successful non-project risk management practices. (Risk management supports alignment between strategy and organization, helps allocate risks to the organizations best able to manage them, and facilitates sound decision-making and accountability at all levels of the organizations.)	Report based on benchmarking and case studies, where appropriate.
<b>Issue A.3.2</b> Strategic management of project related risks	
<i>Strategies</i>	<i>Outputs</i>
Investigate how risks are reassessed and managed at different stages of projects from planning to operation; risks associated with ageing infrastructure; non-traditional management techniques.	Report and case studies, where appropriate.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

## TF A.1 – Task Force on Innovative Financing

<b>Issue TF A.1</b> Understanding transportation project finance tools to facilitate project delivery	
<i>Strategies</i>	<i>Outputs</i>
Identify, review, and evaluate the range of alternatives available for road funding and financing models under determined set of conditions for countries (including tolling; Public-Private-Partnerships, use of credit assistance tools/bonds). Consider the impact in funding due to reductions in fuel consumption.	Guidance and recommendations document indicating conditions for favoring use of particular project finance alternatives, complemented by case studies highlighting successful and unsuccessful practices.  Workshop/seminar.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout its tenure.

**TF A.2 – Task Force on Coordination between national and sub-national authorities**

<b>Issue TF A.1</b>	
<b>Cooperation strategies between national and local road agencies</b>	
<b><i>Strategies</i></b>	<b><i>Outputs</i></b>
Evaluate cooperation and knowledge transfer strategies between national and local road agencies for different economies, government systems, and transportation networks.	Report and case studies, where appropriate, adopted by countries at different development stages illustrating successful practices.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout its tenure.

## **Strategic Theme B: Access and Mobility**

### **Goal**

The goal of this Strategic Theme is to encourage the improvement of access and mobility provided to the traveling public and industry through efficient road network operation and integration with other transport modes.

### **Overview**

The Strategic Theme for Access and Mobility will include four (4) Technical Committees and one Task Force. Strategic Theme B recognizes that road authorities provide a service to the community and industry, acknowledging these groups as customers. At the heart of this issue is the need to provide predictable services and to ensure that the resilience of the network is at an appropriate level.

Obtaining maximum benefit from existing network infrastructure is a priority for many member countries. Improvements to capacity, reliability, safety, energy saving and the use of new traffic technologies and cost-effective applications are particularly important whether achieved by interfacing with other modes and/or the use of intelligent transportation systems (ITS). **Technical Committee B.1 (Road Network Operations/Intelligent Transportation Systems)** will examine these issues providing updates to the ITS/Road Network Operation Manual developed in the 2011-2015 cycle and supporting dissemination and implementation support strategies. It will also examine the issue of Big Data and its applications to road transport.

Road networks are particularly vulnerable to the adverse effects of winter weather. Maintaining acceptable levels of service in a constrained financial environment can be particularly challenging. Issues such as sustainability and the impact to the environment of wide-spread treatments and practices are to be considered. **Technical Committee B.2 (Winter Service)** will study these issues in addition to actively preparing the technical program for the 2018 Winter Road Congress.

**Technical Committee B.3** (Sustainable Multimodality in Urban Areas) will compare strategies of urban mobility, identifying transport policies and strategies from developed and developing countries to improve travel choices and accessibility in the context of the acute demands imposed by urban conditions.

Effective and efficient freight transport is an essential contributor to every economy. **Technical Committee B.4** (Freight) will examine issues surrounding multi-modal and road cargo transport and will review practices related to energy-efficient movement of freight.

The use of technology in road operations presents both challenges and opportunities. **Task Force B.1** (Road Design and Infrastructure for Innovative Transport Solutions) will identify major considerations in the development and deployment of technology enabling Vehicle-to-Infrastructure and Vehicle-to-Vehicle Communication.

### **Technical Committees:**

- B.1 Road Network Operations/Intelligent Transportation Systems
- B.2 Winter Service
- B.3 Sustainable Multimodality in Urban Areas
- B.4 Freight

### **Task Force:**

- TF B.1 Road Design and Infrastructure for Innovative Transport Solutions

## TC B.1 Road Network Operations/Intelligent Transportation Systems

<b>Issue B.1.1</b> Maintenance and improvement of the ITS/RNO Manual.	
<i>Strategies</i>	<i>Outputs</i>
Investigate successful approaches and analyze the factors contributing to their success e.g. improved capacity, more reliable journey times, energy saving, safety and minimizing greenhouse gas emissions. Particular attention should be given to use of new traffic technologies, solutions considering interfaces with other modes, and organizational/governance issues.	Best practice report.  Upgraded web-version of the ITS/RNO Handbook.  Workshops and training materials to support dissemination and implementation strategies.
<b>Issue B.1.2</b> Low cost ITS application	
<i>Strategies</i>	<i>Outputs</i>
Investigate and document the use of smart phones and other cost-effective technologies in support of road network operations. Illustrate examples of ITS tailored to meet the needs of low and middle income countries.	Report and case studies to be included in the ITS/RNO Handbook
<b>Issue B.1.3</b> Big Data in road transport	
<i>Strategies</i>	<i>Outputs</i>
Define the concept of Big Data as relevant to the road transportation community, investigate applications, and document examples of how countries are considering and treating issues such as: applicable regulations, property/ownership of the data; data security; and privacy concerns.	Report and case studies collecting examples of applications; disseminate knowledge

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

Consultation with the predecessor Technical Committee and development of onward planning for the next cycle are expected from this TC.

## TC B.2 – Winter Service

<b>Issue B.2.1</b> Transportation management during winter events	
<i>Strategies</i>	<i>Outputs</i>
Identify and document best practices on winter service management and road user information systems that mitigate the effects of winter events on performance of the system and add to network resiliency.	Case studies-based report on successful practices taking into account potential input from TC E.2.  Training materials and presentations to support dissemination and implementation.  Action plan for promoting these practices through implementation focus activities and events.
<b>Issue B.2.2</b> De-icing salt and brines treatments, interventions and best practices	
<i>Strategies</i>	<i>Outputs</i>
Investigate and document best practices associated with the use of technology in de-icing treatments, including mitigation the impacts on the environment.	Guidance report.
<b>Issue B.2.3</b> Updates to the Snow and Ice Data Book	
<i>Strategies</i>	<i>Outputs</i>
To establish the Snow and Ice Data Book as a current resource for knowledge transfer globally.	Updated version of the Data Book  Inclusion of an interactive format to facilitate use by members.
<b>Issue B.2.4</b> Preparation of the 2018 Winter Road Congress	
<i>Strategies</i>	<i>Outputs</i>
Identify the priority themes and prepare the scientific program for the Congress taking into consideration the concerns and possible contributions from other Technical Committees.	Definition of the technical programme incorporating session(s) on the various criteria of winter operations for decision makers and acceptable levels of service.  Production of the proceedings.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

Consultation with the predecessor Technical Committee and development of onward planning for the next cycle are expected from this TC.

## TC B.3 – Sustainable Multimodality in Urban Regions

<b>Issue B.3.1</b> Multimodal urban transportation policies and strategies	
<i>Strategies</i>	<i>Outputs</i>
Compare efficiency of different multimodal urban transportation policies and strategies considering mobility needs, social objectives and characteristics of transport modes.	Report presenting case studies and recommendations drawn from good practices for developed and developing countries.
<b>Issue B.3.2</b> Road-based mobility solutions including multimodal interchanges and new road mobility	
<i>Strategies</i>	<i>Outputs</i>
Investigate and document in a qualitative and quantitative manner solutions such as: car/bike sharing, carpooling, electro-mobility, public transport increase.	Report presenting case studies and recommendations drawn from good practices.
<b>Issue B.3.3</b> Land use and urban development	
<i>Strategies</i>	<i>Outputs</i>
Study the impact of land use integrated with urban transport system development in urban centers and suburban areas, considering urbanization trends.	Report presenting case studies and recommendations drawn from good practices.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

**TC B.4 – Freight**

<b>Issue B.4.1</b> National policies for multi-modal freight transport and logistics	
<i>Strategies</i>	<i>Outputs</i>
Investigate and document countries' national policies for freight transport and logistics, including best practices in evidence-based freight transport policy-making and evaluation for initiatives.	Report presenting case studies and recommendations drawn from good practices.
<b>Issue B.4.2</b> Truck- traffic on highways	
<i>Strategies</i>	<i>Outputs</i>
Identify best practices (access management, traffic regulations, monitoring, compliance, enforcement)	Report presenting case studies and recommendations drawn from good practices.
<b>Issue B.4.3</b> Good practices on energy-efficient freight transport	
<i>Strategies</i>	<i>Outputs</i>
Good practices on energy-efficient freight transport (technical, operational, logistics, regulatory, and infrastructure)	Report presenting case studies and recommendations drawn from good practices

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

## TF B.1 Road Design and Infrastructure for Innovative Transport Solutions

<b>Issue TF B1.1</b> Challenges and opportunities for road design and operations	
<i>Strategies</i>	<i>Outputs</i>
Identify major considerations in the development and deployment of Vehicle-to-Infrastructure (V2I) and Vehicle-to-Vehicle (V2V) communication in road design and operations.	Report outlining key topics being explored and with references to other organizations.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout its tenure.

## **Strategic Theme C: Safety**

### **Goal**

The goal of this Strategic Theme is to improve the safety and efficiency of road transport, including the movement of people and goods on the network, while effectively and widely promulgating knowledge of all aspects of road safety and encouraging implementation of positive practices.

### **Overview**

Roads play a fundamental part in providing safe access to education, welfare, leisure and employment opportunities. The Association's Declaration of Support for the UN Decade of Action on Road Safety, signed in 2011, reflects the commitment to promoting improvements to road safety. The time and resources allocated to the production of a state-of-the-art Road Safety Manual is a tangible demonstration of the Association's focus on improving road safety.

**Technical Committee C.1 (National Road Safety Policies and Programs)** will examine the policies and strategies underpinning safety investment decision making, strategies used to apply systematic road safety improvements to routes and networks. This work will be incorporated into the Road Safety Manual. This group will also pursue efforts to disseminate and support the application of measures recommended in the Road Safety Manual.

**Technical Committee C.2 (Design and Operations of Safer Road Infrastructure)** will focus on issues pertinent to vulnerable road users, driver distraction and fatigue, and how human factors should be considered in road design and operations. The work will be incorporated into the Road Safety Manual and also lead to Road Safety Audit guidelines take into account conditions in low and middle income countries.

**Task Force TF C1 (Infrastructure Security)** will forge links with relevant sectors to assemble knowledge pertaining to transportation security issues and their contribution to system resiliency.

### **Technical Committees:**

C.1 National Road Safety Policies and Programs

C.2 Design and Operations of Safer Road Infrastructure

### **Task Forces**

TF C.1 Infrastructure Security

## TC C.1 – National Road Safety Policies and Programs

<b>Issue C.1.1</b> Road Safety Manual	
<i>Strategies</i>	<i>Outputs</i>
Updates to Road Safety Manual including support to training development and dissemination strategies	Upgraded version of the RSM web resource. Develop training and implementation strategies
<b>Issue C.1.2</b> National Road Safety policies evolution	
<i>Strategies</i>	<i>Outputs</i>
Investigate the implementation of National Road policies and their evolution. Attention shall be paid to the implementation of the “Safe system approach” and its adoption in low and middle income countries. The TC will build on the output of the OECD project group working on this issue.	Technical report and main findings to be incorporated in the Road Safety Manual.

Development of content alongside the formal outputs to foster visibility and the sharing of the group’s work throughout the cycle.

Consultation with the predecessor Technical Committee and development of onward planning for the next cycle are expected from this TC.

## TC C.2 –Design and Operation of Safer Road Infrastructure

Issue C.2.1 Vulnerable road users	
<i>Strategies</i>	<i>Outputs</i>
Investigate and develop current materials related to pedestrian, cyclist, and motorcycle safety as well as road safety issues relevant to the elderly	Materials for inclusion in the Road Safety Manual.  Development of training and presentation materials consistent with Road Safety Manual promotion strategies.
Issue C.2.2 Human factors and design	
<i>Strategies</i>	<i>Outputs</i>
Complete development of case studies and successful strategies and practices related to consideration of human factors in road design and operations including driver distraction and fatigue.	Input for updating of the Road Safety Manual
Issue C.2.3 Setting speed limits	
<i>Strategies</i>	<i>Outputs</i>
Joint collaboration with WHO, automobile industry, UN Economic Commission for Europe, and the World Bank to update guidance.	Input for updating of the Road Safety Manual  Presentation materials appropriate for informing members.
Issue C.2.4 Catalogue of design safety problems and potential countermeasures for LMIC	
<i>Strategies</i>	<i>Outputs</i>
Catalogue of design safety problems and potential countermeasures for LMIC	Input for updating of the Road Safety Manual
Issue C.2.5 Road Safety Audit guidelines	
<i>Strategies</i>	<i>Outputs</i>
Review Global Road Safety Audit Guidelines - including consideration for low and middle income countries to be included in any future revisions	Amended or amplified RSA guidelines containing points appropriate for consideration in Low and Middle Income Countries.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

## TF C.1 – Infrastructure Security Task Force

<b>Issue TF C.1</b> Road security and resiliency	
<i>Strategies</i>	<i>Outputs</i>
To develop information that raises member awareness about security issues and their contribution to system resiliency.	Limited distribution products addressing topics such as criticality and vulnerability assessment and the role of security in road system management.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout its tenure.

## **Strategic Theme D: Infrastructure**

### **Goal**

The goal of this Strategic Theme is to improve the quality and efficiency of road infrastructure through the effective management of assets in accordance with user expectations and government requirements.

### **Overview**

While new technological, social, and environmental developments are expanding the sphere of interest for road authorities, management of road infrastructure remains their core business. The need for more efficient and effective use of budgets requires constant balancing of funds to road assets in terms of construction and maintenance.

Assessing the budget level needed to provide optimal maintenance for road infrastructure and balancing the needs of multiple assets with budgetary constraints is an important part of the work of road administrations. This is reflected in the work of **Technical Committee D.1 (Asset Management)**, which will also examine the issue of balancing these important engineering needs by upgrading a Web-based Asset Management Manual to support road administrations in the implementation of road asset management programs.

**Technical Committee D.2 (Pavements)** will investigate environmentally-friendly and sustainable paving solutions and materials. Non-destructive pavement monitoring and testing techniques will also be an area of study.

Complying with new codes and standards require thorough bridge design and inspection practices. **Technical Committee D.3 (Bridges)** will study these practices, will review repair and rehabilitation strategies, and will assess evaluation models to help determine reliability and safety.

In the field of rural roads and earthworks, **Technical Committee D.4 (Rural Roads and Earthworks)** will investigate road administrations response to adverse conditions as a result of climate change activities while considering the use of local, marginal, and secondary materials in rural and unpaved roads.

The successful past work of the Association in the area of road tunnel operations will be built upon by **Technical Committee D.5 (Road Tunnels Operations)**. It will study how sustainable road tunnel operations can be ensured, develop an improved understanding of safety management in the light of accidents and fires, and expand study of underground road networks. Much of the work will be incorporated into an updated Road Tunnels Manual.

### **Technical Committees:**

- D.1 Asset Management
- D.2 Pavements
- D.3 Bridges
- D.4 Rural Roads and Earthworks
- D.5 Road Tunnels Operations

## TC D.1 Asset Management

Issue D.1.1 Road Asset Management Manual	
<i>Strategies</i>	<i>Outputs</i>
Produce a comprehensive tool guide to support road administrations in the implementation of road asset management programs, including assessment of proper network maintenance.	Upgrades to the Web Based Asset Management Manual supported by case studies and practical examples. (Web support version, tools, case studies, forums and communities of practice)
Issue D.1.2 Dissemination and education	
<i>Strategies</i>	<i>Outputs</i>
Introduction of Asset Management in tertiary educational programs, training for post-graduate engineers. Special treatment for LMIC countries and regional singularities.	Curriculum recommendations for academia.  Training and presentation materials for use of within road transportation agencies
Issue D.1.3 Innovative approaches to Asset Management	
<i>Strategies</i>	<i>Outputs</i>
Identify innovative approaches to maintenance management and life cycle management road administrations.	Comprehensive report including an assessment of concepts and methods.
Issue D.1.4 HDM-4 support	
<i>Strategies</i>	<i>Outputs</i>
HDM-4 support (oversight of upgrades that are determined by advisory group)	

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

Consultation with the predecessor Technical Committee and development of onward planning for the next cycle are expected from this TC.

## TC D.2 – Pavements

<b>Issue D.2.1</b> Green paving solutions and sustainable pavement materials	
<i>Strategies</i>	<i>Outputs</i>
Investigate the challenges and incentives used in different countries to encourage the use of methods and materials that minimize the use of natural resources, reduce energy consumption and emissions, and improve safety (recycling, low temperature mixes/warm-mix asphalt, new binders/aggregates).	State of practice report and recommendations on the use of green solutions, challenges faced and incentives implemented to encourage use by member countries.
<b>Issue D.2.2</b> Low cost pavements systems	
<i>Strategies</i>	<i>Outputs</i>
Evaluate available technologies and practices for better sustainability and management of pavements.	Report on best practices that can be applied in all countries, with special consideration of low and middle income countries.
<b>Issue D.2.3</b> Non-destructive pavement monitoring and testing techniques	
<i>Strategies</i>	<i>Outputs</i>
Review use of technology such as laser, image processing and others in pavement monitoring and evaluation techniques	Symposium SURF 2017 and state of the art report on road condition monitoring and road/vehicle interaction.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

## TC D.3 – Bridges

<b>Issue D.3.1</b> Bridge design for inspection and maintenance	
<i>Strategies</i>	<i>Outputs</i>
Undertake an evaluation and analysis of inspection and maintenance practices developed to meet new codes and standards. Review of practices to include practical examples and case studies of successful and failed practices.	Report reviewing good and poor practices and proposal of general recommendations and guidance.
<b>Issue D.3.2</b> Technical and economic considerations of bridge rehabilitation methods	
<i>Strategies</i>	<i>Outputs</i>
Consideration and review of rehabilitation strategies (from no rehabilitation to major rehabilitation or rebuilding). Include factors such as: bridge life span; remaining life, residual value, replacement cost, rehabilitation cost, replacement costs.	Report with review and analysis of the experience of different countries.  Compendium of best practices.
<b>Issue D.3.3</b> Inspections and damage assessment techniques	
<i>Strategies</i>	<i>Outputs</i>
Conduct a review of assessment techniques and evaluation models used to determining the reliability and safety of bridges.	Report on the impact and outcomes of several damage assessment techniques and evaluation models.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

## TC D.4 – Rural Roads and Earthworks

Issue D.4.1 Exposure of roads to climate change	
<i>Strategies</i>	<i>Outputs</i>
Investigate and document simulation and modelling tools and techniques to support road administrations in managing and responding to adverse conditions as a result of climate change (e.g., drainage and storm water management).	Report of best practices on before/after strategies, and guidance.
Investigate and document local practices and techniques for “all-weather” service (dry season, rainy season)	Report of best practices.  Report of best practices and recommendations.
Issue D.4.2 Local materials, practices and techniques	
<i>Strategies</i>	<i>Outputs</i>
Investigate and document construction and maintenance practices and techniques incorporating the use of marginal and secondary materials, including stabilization.	Review of practices using marginal and secondary materials in rural or in industrial areas.
Disseminate work on use of local materials produced in previous cycles.	Seminar/Workshop incorporating Technical Committees’ past products
Issue D.4.3 Management of earthworks	
<i>Strategies</i>	<i>Outputs</i>
Collect information and conduct analysis of best practices in earthworks management with a focus on systematic approaches that could be incorporated into broader road networks asset management to support the decision making process.	Guidance report on how to develop and implement Earthwork Management Systems considering the tools for those systems: inventory, assessment and aids to decision making.  To include updates to the Asset Management Manual in consultation with TC D1.1 charged with the development of the web-based Asset management manual to ensure consistency in content and format.

Development of content alongside the formal outputs to foster visibility and the sharing of the group’s work throughout the cycle.

## TC D.5 – Road Tunnel Operations

Issue D.5.1 Road Tunnels Manual	
<i>Strategies</i>	<i>Outputs</i>
To maintain and disseminate current information regarding sustainable road tunnel operations.	Updates to the web-based Road Tunnels Manual.  Development of relevant training and presentation material  Terminology activities.
Issue D.5.2 Sustainable road tunnel operations	
<i>Strategies</i>	<i>Outputs</i>
To maintain and disseminate current information regarding sustainable operation of tunnels system and equipment including anti-fire safety, lighting, and ventilation equipment	Report on case studies and recommendations.
Issue D.5.3 Integrated road tunnel safety	
<i>Strategies</i>	<i>Outputs</i>
To maintain and disseminate current information regarding designing tunnels for effective, efficient, and safe operation. To oversee the project of up-grade of the QRAM model in liaison with the General Secretariat	Report on case studies and recommendations.  Upgraded version of the QRAM software.
Issue D.5.4 Large underground and interconnected infrastructure	
<i>Strategies</i>	<i>Outputs</i>
To maintain and disseminate current information regarding optimization of operational and safety strategies for large underground and interconnected infrastructure	Report on case studies and recommendations.
Issue D.5.5 Persons with reduced mobility in the tunnel environment	
<i>Strategies</i>	<i>Outputs</i>
To maintain and disseminate current information regarding persons with reduced mobility in the tunnel environment	Report on case studies and recommendations.
Issue D.5.6 Road tunnel emissions	
<i>Strategies</i>	<i>Outputs</i>
Update road tunnel emissions guidelines.	Updated version of the PIARC guidelines.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

Consultation with the predecessor Technical Committee and development of onward planning for the next cycle are expected from this TC.

## **Strategic Theme E: Climate Change, Environment and Disasters**

### **Goal**

The goal of this Strategic Theme is to increase resiliency and protect investments in transportation infrastructure from impacts of climate change events while lessening the impact of road transportation on the environment.

### **Overview**

After careful consideration and based on strong responses from First Delegates, the Association is elevating the treatment of Climate Change and Environmental issues to the Strategic Theme level. The creation of this new Strategic Theme offers an opportunity to increase the visibility of the Association's work related to climate change and thus demonstrate its responsiveness to an issue of significant interest to the global transportation community.

Dealing with transport strategies for climate change adaptation to increase resiliency of road infrastructure are issues to be studied in **Technical Committee E.1 (Adaptation Strategies/Resiliency)**.

The environmental impacts from transportation require that road organizations commit to reducing pollution by identifying effective reduction strategies and alternative mitigation policies and measures. **Technical Committees E.2 (Environment Considerations in Road Projects and Operations)** will address these issues.

**Technical Committee E.3 (Disaster Management)** will study and disseminate information to support road administrations response to and recovery from large scale natural disasters, the consequences of which are significant.

### **Technical Committees:**

- E.1 Adaptation Strategies/Resiliency
- E.2 Environment Considerations in Road Projects and Operations
- E.3 Disaster Management

## TC E.1 Adaptation Strategies/Resiliency

<b>Issue E.1.1</b> Adaptation strategies to increase resiliency	
<i>Strategies</i>	<i>Outputs</i>
To investigate and disseminate information about current adaptation strategies to increase the resiliency of road infrastructure.	Report based on case studies
<b>Issue E.1.2</b> Climate Change Adaptation Framework	
<i>Strategies</i>	<i>Outputs</i>
Refinement of the Climate Change Adaptation Framework (based on the Special Project developed in the 2011-2015 cycle) and follow-up of its implementation.	Report based on case studies

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

## TC E.2 Environment Considerations in Road Projects and Operations

Issue E.3.1 Air quality	
<i>Strategies</i>	<i>Outputs</i>
Identify approaches and methodologies applied in selected countries to conduct air quality analyses.  Investigate how road administrations and other authorities monitor air quality and how information is used in road traffic management.	State- of- the- art report and recommendations.
Issue E.3.2 Noise mitigation	
<i>Strategies</i>	<i>Outputs</i>
Evaluate and document traffic noise impacts; examination of potential mitigation measures; reasonable and feasible noise mitigation measures, including regulations and guidance setting noise levels.	Report on successful practices with case studies.
Issue E.3.3 Mitigation policies and measures	
<i>Strategies</i>	<i>Outputs</i>
Undertake the evaluation and analysis of other mitigation policies and measures such as: photocatalytic pavements, carbonation of concrete pavements, urban heat island effect	State- of- the- art report and recommendations.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

### TC E.3 Disaster Management

<b>Issue E.2.1</b> <b>Disaster Management Manual</b>	
<i>Strategies</i>	<i>Outputs</i>
To maintain and disseminate information related to road administration response strategies for natural disasters.	Update of the Disaster Management Manual elaborated by TC 1.5 (Risk Management) in current cycle.
Study and document practices to ensure a quick and safe recovery from major disasters.	Report on case studies and recommendations.

Development of content alongside the formal outputs to foster visibility and the sharing of the group's work throughout the cycle.

## Committee on Terminology

<b>Issue T.1</b> Updating the World Road Association Dictionaries	
<i>Strategies</i>	<i>Outputs</i>
Update the existing version of the web-based dictionary in each of the current languages, including ongoing upgrading of the French and English dictionaries.  Increase the number of languages of translation of the dictionary in liaison with World Road Association member countries.	Upgrade the terminology section of the World Road Association website

## World Road Association’s Organizational Goals

The World Road Association has established a set of organizational goals that will assist in fulfilling its mission. These goals have been translated into issues and strategies that will lead to a number of expected outcomes. For each organizational goal, one of the governing structures of the Association has been assigned primary responsibility. These are: the Association’s three Commissions, the Conference of National Committees, the General Secretariat, and the Executive Committee. The specific assignments are indicated in connection with each goal statement.

### Goal 1: Management and Operation of the World Road Association

*To continuously improve the management and operation of the World Road Association in order to provide members with a service that represents good value for money.*

(Assigned to the Executive Committee and the General Secretariat.)

Issue 1.1 Improve the effectiveness of the Council and the Executive Committee	
<i>Strategies</i>	<i>Outcomes</i>
<b>Provide</b> Council with better information on which to base policy decisions	<b>Clear decision</b> making and more rapid management response
Issue 1.2 Improve communications between the Technical Committees and the Executive Committee and the Council	
<i>Strategies</i>	<i>Outcomes</i>
<b>Provide</b> direction to Technical Committees on the priorities for study by meetings of the Strategic Theme Coordinators with the Chairs and Secretaries of the Technical Committees and by using telematics and internet communications	<b>Better management</b> of the outputs of the Technical Committees and feedback to the Executive Committee of expert views
Issue 1.3 Improve the effectiveness of Technical Committees	
<i>Strategies</i>	<i>Outcomes</i>
<b>Adopt</b> a project orientated approach for the definition of the outputs and the management of Technical Committees	<b>Outputs</b> that provide a better fit with needs

## Goal 2: Cooperation with International and Regional Organizations

*To promote cooperation, including knowledge sharing and exchange and joint projects, with regional organizations of road authorities and with other international organizations with related goals.*

(Assigned to the Executive Committee, the Communications Commission, and the General Secretariat.)

<b>Issue 2.1</b>	
<b>Improve cooperation with international and regional organizations with related goals</b>	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Invite</b> representatives of other professional organizations to attend Council meetings as observers</p> <p><b>Develop</b> agreements for cooperation and collaboration with relevant international and regional organizations</p> <p><b>Monitor</b> the World Road Association's relationship with international and regional bodies, including the implementation of MoUs where necessary</p> <p><b>Involve</b> other organizations in Technical Committees</p> <p><b>Seek cooperation</b> in special purpose conferences – joint sessions</p> <p><b>Undertake</b> discussion with international bodies to establish opportunities for joint working or support</p>	<p><b>Improved studies</b> of issues that cut across professional boundaries</p> <p><b>More effective</b> use of human and knowledge resources, leading to more and improved products with wider appeal</p> <p><b>Increased</b> visibility of the Association</p> <p><b>Greater</b> uptake of the Association's outputs</p> <p><b>Improved participation</b> by regional associations and improved information exchange</p> <p><b>Joint</b> projects with a wider range of international groups</p>
<b>Issue 2.2</b>	
<b>Enlarge the geographical distribution of conference activity</b>	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Identify</b> opportunities to cooperate with other organizations to participate in regional and technical conferences</p>	<p><b>More interaction</b> between different regions</p> <p><b>Activity in more regions</b></p>

### Goal 3: Congress Management

*To host major Congresses that are valuable events for setting the direction for the future, provide knowledge exchange and networking opportunities among members of the road transport community, and develop a range of options that are viable from the World Road Association's point-of-view.*

(Assigned to the Executive Committee and the General Secretariat.)

<b>Issue 3.1</b>	
<b>Improve the effectiveness of the Congresses for information exchange</b>	
<i>Strategies</i>	<i>Outcomes</i>
<b>Encourage</b> sessions which are looking toward the future	<b>More effective Congresses</b> – oriented towards the future activities of the World Road Association
<b>Encourage</b> contributions from the different stakeholders including the different categories of users, and from other international organizations	<b>Stimulate</b> growth in membership
	<b>Better mutual recognition</b>

#### Goal 4: Activity and Visibility at the National Level

*To build and strengthen the activity and visibility of the Association at the national level.*

(Led by the Conference of National Committees and supported by the Communications Commission and General Secretariat.)

Issue 4.1	
Improve the sharing of information to a wider audience	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Promote</b> the activity of the Association by actions led at national level by National Committees or correspondent organizations when they exist and promote the establishment of a national committee in other cases</p> <p><b>Strengthen</b> the relationship between existing National Committees by sharing information on actions at national level and by jointly organized events</p>	<p><b>More</b> professionals within member countries linked to the World Road Association's activities worldwide</p> <p><b>More</b> efficient working</p>
Issue 4.2	
Cooperation with relevant national organizations	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Strengthen</b> links with other relevant national organizations</p>	<p><b>Improved</b> visibility of the Association in member countries</p>

**Goal 5: Knowledge Sharing and Exchange Policy**

*To develop directions designed to freely facilitate practical means for efficient and effective knowledge transfer among countries.*

(Assigned to the Communications Commission.)

<b>Issue 5.1</b> <b>Develop the World Road Association’s directions on knowledge sharing and exchange</b>	
<i>Strategies</i>	<i>Outcomes</i>
<b>Develop</b> directions designed to best achieve knowledge sharing and exchange between the World Road Association member countries	<b>More effective</b> and efficient sharing and exchange of knowledge between member countries

## Goal 6: Communications with Members and Outside Groups

*To improve participation of member governments and others, and to increase the number of members of the road community benefiting, whether through National Committees or by direct participation, in the World Road Association Technical Committees.*

(Assigned to the Communications Commission and General Secretariat)

Issue 6.1	
Improve communications with members and outside groups	
<i>Strategies</i>	<i>Outcomes</i>
<b>Develop</b> a clear identity for the Association and raise its profile	<b>Interest</b> in the World Road Association, stimulate and encourage membership, especially among young professionals
<b>Develop and implement</b> a rolling action plan	<b>Worldwide</b> road community better informed about international experience on road and road transport issues and best practice
<b>Examine</b> methods to attract and retain new members including identifying enhanced member benefits	<b>Increased</b> membership and increased levels of retention through improved membership satisfaction
<b>Oversee</b> the World Road Association Prizes Competition 2019	<b>Wider</b> , targeted audience for the World Road Association's publications and products

## Goal 7: Publications and Products

*To develop practical means for efficient and effective knowledge transfer among countries and to produce and disseminate authoritative, impartial and interesting publications and products that address current road and road transport issues*

(Assigned to the Communications Commission and General Secretariat.)

Issue 7.1	
Oversee implementation of the World Road Association's policy on knowledge transfer	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Implement</b> the policy to best achieve knowledge transfer between the World Road Association member countries</p> <p><b>Explain</b> and promote this policy to First Delegates, National Committees and Technical Committees</p>	<p><b>A new approach</b> to transferring knowledge between member countries</p> <p><b>Support</b> from member countries in adopting the new approach to knowledge transfer</p>
Issue 7.2	
Oversee the World Road Association's publications and products	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Support</b> <i>Routes/Roads</i> (define target groups, editorial policy, layout, etc.)</p> <p><b>Oversee</b> the quality of the World Road Association's publications and the presentation of its products</p> <p><b>Continually improve</b> the website and employ social media outlets as tools for the exchange of knowledge</p>	<p><b>Appreciation</b> of the World Road Association's publications and products with increased readership</p> <p><b>Increased attractiveness</b> of the World Road Association's publications and products</p> <p><b>Increased accessibility</b> of the World Road Association's publications and products</p>
Issue 7.3	
Flagship publications	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Develop and maintain</b> flagship publications in key areas of interest and promote widely</p>	<p><b>Improved awareness of and response to</b> key issues and an increased profile for the Association</p>

## Goal 8: Financial Management

*To put in-place transparent and rigorous financial management of the Association and in the service of its purpose, and to optimize its resources in order to meet future challenges.*

(Assigned to the Finance Commission.)

Issue 8.1	
Put the financial management of the Association in the service of its purpose	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Review</b> the costs and financing of the projects of the Association to help control their execution</p> <p><b>Develop</b> a proactive policy for the management of revenues and expenses in order to meet the operational requirements of the Association and to complete the projects it develops</p>	<p><b>Members</b> can find out more about what is done with their membership fees</p> <p><b>Ensure</b> complete coverage of the running costs and promotion of the Association's projects</p>
Issue 8.2	
Optimize investment performance for the funds managed by the Association	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Provide guidance</b> for the prudent management of the funds of the Association and oversee their management</p> <p><b>Provide guidance</b> for the development of the annual budget and a four-year financial plan for the strategic planning period</p>	<p><b>Safeguard</b> the assets of the Association</p> <p><b>Optimize</b> the management of the assets</p>
Issue 8.3	
Ensure transparency of financial management	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Ensure</b>, as far is reasonably practicable, a balanced geographical representation of the Finance Commission (despite travel difficulties)</p> <p><b>Safeguard</b> fully the rules concerning the Finance Commission, in particular the role of the management auditors</p>	<p><b>Opportunities</b> for involvement from all the regions of the world in the financial management of the Association</p> <p><b>Maintain</b> an independent monitoring of the General Secretariat via management auditors</p>
Issue 8.4	
Responsible and effective use of the World Road Association Special Fund	
<i>Strategies</i>	<i>Outcomes</i>
<p><b>Review</b> and update policies and application procedures for the use of the Special Fund</p> <p><b>Promote</b> the use of the Special Fund in combination with actions undertaken by the Association for the benefit of developing countries</p>	<p><b>Increased</b> participation and presence of road professionals from developing countries in the World Road Association's activities</p> <p><b>A more efficient</b> use of the financial resources of the Association</p>

## Goal 9: Strategic Planning

*To identify, develop and promulgate policy and practices that contribute to safer and more effective management and use of road and road transport systems within an integrated sustainable transport context.*

(Assigned to the Strategic Planning Commission in cooperation with the General Secretariat.)

<b>Issue</b>		
<b>Meet the needs of members for improved road and road transport policy and practices through a systematically developed and monitored technical and supporting work programme</b>		
<i>Strategies</i>		<i>Outcomes</i>
<b>9.1</b>	<b>Maintain</b> a formal strategic planning process through the development of a strategic planning calendar for the four-year cycle	<b>Timely</b> delivery of the Strategic Plan and the work program
<b>9.2</b>	<b>Oversee</b> the development of a four-year work program from the Strategic Plan	<b>A well-directed</b> and transparent work program that meets members' needs
<b>9.3</b>	<b>Monitor</b> the implementation of the work program on a regular basis and coordinate the work across the Technical Committees	<b>A work program</b> that remains focused on target to achieve its goals
<b>9.4</b>	<b>Oversee</b> revisions to the work program	<b>A flexible work program</b> that is responsive to members' changing needs and emerging issues
<b>9.5</b>	<p><b>In close cooperation with the General Secretariat:</b></p> <p><b>Monitor the use of</b> the guidelines on seminar characteristics, expected outcomes, relevance to developing countries and on economic assistance for organizing seminars</p> <p><b>Prepare</b> a seminar program for 2016-2019 in consultation with the Technical Committees</p> <p><b>Work with the General Secretariat</b> to assist Technical Committees and National and Regional Committees, etc. with the organization of seminars</p>	<b>Participation</b> of each Technical Committee in two seminars in developing and transitional countries during 2016-2019

<i>Strategies</i>		<i>Outcomes</i>
<b>9.6</b>	<b>Revise</b> the Strategic Plan for the next four-year cycle through an extensive consultation process	<b>A Strategic Plan</b> to direct the work program that is up-to-date, relevant and addresses priority issues for members
<b>9.7</b>	<b>Review</b> proposals to address emerging and highly-focused issues during the currency of the Strategic Plan <b>and recommend</b> appropriate actions to Executive Committee	<b>Ensure</b> that the Association's Strategic Plan and activities are dynamic and responsive to events
<b>9.8</b>	<b>In conjunction with</b> the four-yearly revision of the Strategic Plan, review the World Road Association structure – Commissions, Strategic Themes and Technical Committees	<b>A structure best-suited</b> to efficient and effective delivery of the work program and achievement of the World Road Association's strategic goals
<b>9.9</b>	<b>Oversee</b> the planning and direction of the Strategic Direction and Special Sessions at the World Road Congress and the International Winter Road Congress	<b>Shared understanding</b> of emerging and priority issues both for road administrations and to be addressed in the World Road Association's forward work program