SUNRA

Sustainability – National Road Administrations

Measures to Improve Sustainability – Framework Part 2

Framework v1.0

August 2012

The Framework

The results of the research undertaken as part of work package 2 have informed the development of a framework for introducing sustainability metrics to NRAs. For detailed information on the methodologies undertaken please see the 'Measures to Improve Sustainability Framework Part 2 Report'. The framework developed contains four levels of sustainable development, with one being the lowest and four being the highest (see Figure 1). It is expected that NRAs will begin by achieving level 1, before they then start to move up through the framework levels as they consider appropriate. Once they are achieving level 4, the NRA will be considered to be making significant contributions to wider sustainable development objectives.

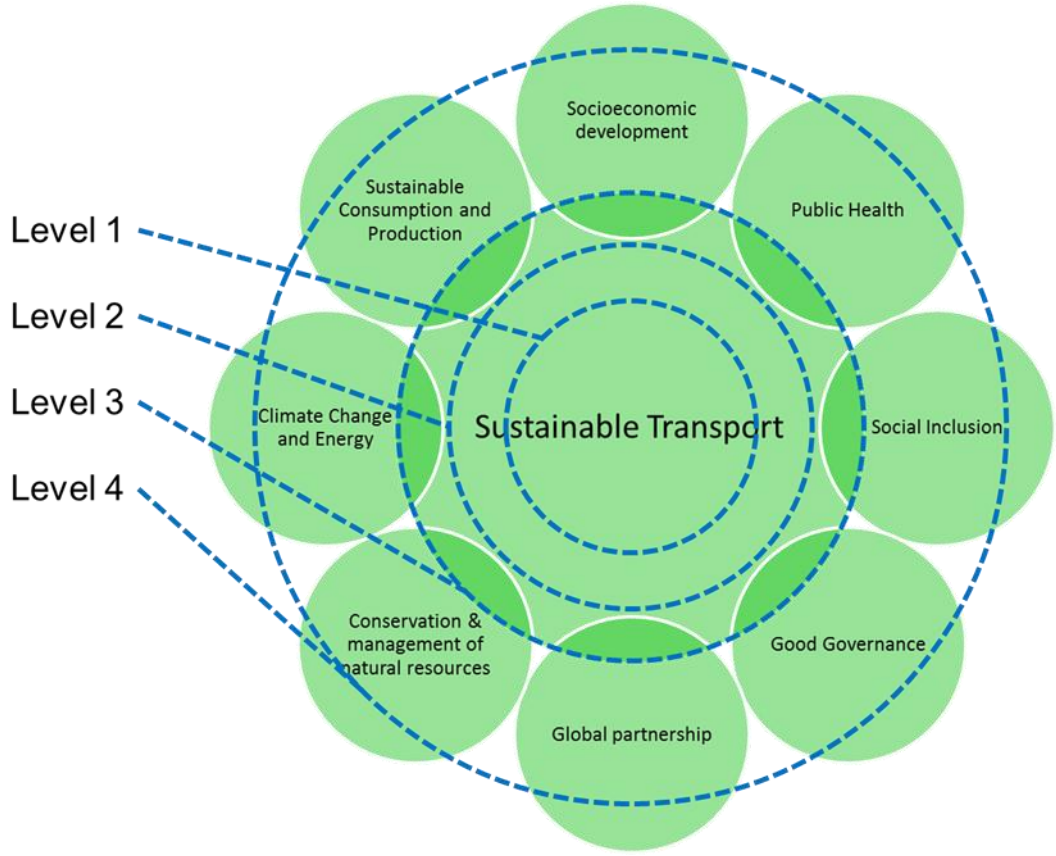

Figure 1: Levels of sustainable development performance for an NRA

The levels within the framework can be described as follows:

- Level 1 – the NRA is monitoring a number of its own current priorities in terms of sustainability.
- Level 2 – the NRA is monitoring a wide range of priorities in terms of sustainability.
- Level 3 – the NRA is monitoring wider issues that demonstrate its contribution to sustainable transport.
- Level 4 – the NRA is monitoring issues that demonstrate its wider contribution to sustainable development.

In order to ensure that sustainability is being considered at all levels within NRAs, metrics have been developed for projects, programmes and the board. At the lowest level of the framework, NRAs are only expected to monitor at the project level; however as they progress through the framework metrics are introduced at the programme and board levels. It is

expected that NRAs achieving the highest level within the framework will be monitoring a significant number of sustainability metrics at the programme and board level.

Within the framework, the metrics monitored at the lower levels will continue to be monitored as an NRA moves up to the higher levels, with more metrics being added as the NRA progresses through the framework. It is considered important that the NRAs continue to monitor the lower level metrics in order to monitor their sustainability performance over a period of time, with the hope that they will see improvements as they progress through the levels. However it is not necessary that improvement is seen before an NRAs moves up to the next level.

Table 1: The Framework

	Level 1	Level 2	Level 3	Level 4
Board	Commitment by the board to sustainability. No requirement to monitor performance on a corporate level.	Level 1. Plus monitoring corporate level performance of the following list of metrics (see Metrics Level 2).	Level 2. Plus monitoring metrics that demonstrate the NRAs wider contribution to sustainable transport (see Metrics Level 3).	Level 3. Plus monitoring metrics that demonstrate the NRAs wider contribution to sustainable development (see Metrics Level 4).
Programme	Commitment to monitor project level sustainability performance. No requirement to monitor performance on a systems level.	Level 1. Plus monitoring programme level performance of the following list of metrics (see Metrics Level 2).	Level 2. Plus taking a systems based approach to monitoring sustainable transport (see Metric Level 3).	Level 3. Plus taking a systems based approach to monitoring sustainable development (see Metrics Level 4).
Project	Monitor sustainability performance based on current priorities. No requirement to cover all contributions to sustainable development. NRAs should select from the following list of metrics (see Metrics Level 1).	Monitor sustainability performance based on the following list of metrics (see Metrics Level 2).	Level 2. Plus monitoring wider project level contributions to sustainable transport (see Metrics Level 3).	Level 3. Plus monitoring wider project level contributions to sustainable development (see Metrics Level 4).

The metrics outlined for each level provide an example of what should be monitored for each of the sustainability topics. The vast majority of these metrics are either currently being measured by a European NRA or are recommended as suitable measures by the TRB as part of their 'Guidebook for Sustainability Performance Measurement for Transportation Agencies'. It should be noted that some of the metrics have been slightly amended to either make them more relevant to Europe or to improve their readability. A small number of metrics have been suggested by the research team, following discussions with experts in the appropriate topic areas, such as those on climate change adaptation and renewable energy. (The origins of each of the metrics are outlined in the section on topics). However, for these metrics and for those which are currently identified as gaps it is recommended that metrics

are developed and agreed to ensure coverage of all of the topic areas that have been identified as important.

The SBA KPI project, completed in May 2012, produced a benchmarking framework which outlined a process for developing new key performance indicators (see Appendix A of this report and the SBA KPI final report). It is suggested that this process could be used to fill the gaps within this framework.

In addition, it may be that some of the metrics in the framework that are currently measured by NRAs could be improved or changed to better reflect the sustainability topic being considered. The process identified in the SBA KPI benchmarking framework could also be used to make these changes.

Metrics Level 1

Board

None required

Programme

None required

Project

Pillar	Topic	Metric
Economic	Economic viability	Construction/ maintenance costs as a proportion of planned budget
	System efficiency	Travel time disruption during construction
Social	Equity/equal mobility	Ratio of disadvantaged to non-disadvantaged systems users experiencing delay due to construction activities
	Safety	Killed or seriously injured (KSI) during construction
		Accidents involving personal injury to workforce at construction sites
Environment	Air quality	Emissions of PM_{10} during construction
	CO_2 emissions	Carbon dioxide (CO_2) emitted during construction
	Cultural heritage	No metric identified
	Ecosystems	Percentage of habitats protected
	Noise	Number of dwellings exposed to excessive noise during construction
	Resource consumption & waste	Amount of waste generated by type weight and or volume
		Amount of construction waste set to landfill by type, weight and/or volume
		Amount of hazardous waste generated
	Water quality	Percentage of highway with managed drainage

Metrics Level 2

All metrics from Level 1, plus the following additional metrics:

Board

Pillar	Topic	Metric
Economic	Economic viability	Number of construction/ maintenance projects within planned budget
Social	Safety	Killed or seriously injured (KSI)
Environment	CO_2 emissions	Carbon dioxide (CO_2) emitted by NRA and contractors per year/ km NRA road network

Programme

Pillar	Topic	Metric
Economic	Economic viability	Number of construction/ maintenance projects in the programme within planned budget
Social	Safety	Number and proportion of projects in the programme evaluated for effect on crashes
Environment	CO_2 emissions	Carbon dioxide (CO_2) per year/ km NRA road network
	Climate change adaptation	Number and proportion of projects in the programme that have completed a climate change risk assessment

Project

Pillar	Topic	Metric
Economic	System efficiency	Congestion reduction per lane KM due to project
Social	Accessibility	Change in the number of jobs within reasonable travel time (by mode) for NRA's population due to selected project alternative
	Equity/equal mobility	Ratio of disadvantaged to non-disadvantaged population benefiting from project
	Safety	Project is evaluated for effect on crashes
Environment	Air quality	Emissions of PM_{10} due to road users
	CO_2 emissions	CO_2 emissions due to road users
	Ecosystems	Percentage of wildlife corridors protected
	Resource consumption & waste	Percentage of recycled material used as a percentage of total material

Metrics Level 3

All metrics from Level 2, plus the following additional metrics:

Board

Pillar	Topic	Metric
Economic	Economic viability	Cost per user/vehicle/ household of taxes and fees dedicated to transport
	Modal split	No metric identified
	Prosperity	Cost of shipment per ton/mile
Social	Job creation & training	No metric identified
	Safety	Accidents involving personal injury to construction workforce
	User satisfaction	No metric identified

Programme

Pillar	Topic	Metric
Economic	Economic viability	Percentage of spend evaluated using whole life costing
	Prosperity	Cost of shipment per ton/mile
	Road condition	Percentage of network achieving good state of repair
	System efficiency	Volume/capacity ratio by functional class
Social	Accessibility	Change in the number of jobs within reasonable travel time (by mode) for programme's population
		Change in number of key enterprises in key industries with reasonable access to high-capacity highway
	Equity/equal mobility	Ratio of disadvantaged to non-disadvantaged population benefiting from programme
	Job creation & training	No metric identified
	Safety	Number and cost of projects that address safety concerns at the system, corridor, and local levels
		Accidents involving personal injury to workforce at construction sites within the programme
	Security	Level of redundancy for critical passenger and freight infrastructure
	User satisfaction	No metric identified
Environment	Air quality	Emissions of PM_{10} across the programme
	Climate change adaptation	Number and proportion of projects that have implemented a climate change risk assessment.
	Cultural heritage	No metric identified
	Ecosystems	Percentage of habitats protected
		Percentage of wildlife corridors protected across the programme
	Noise	Number of dwellings exposed to excessive noise
	Resource consumption & waste	Net material sent to landfill across the programme
	Water quality	Percentage of highway with manage drainage

Project

Pillar	Topic	Metric
Economic	Prosperity	Change in cost of shipment per ton/mile due to project
Social	Accessibility	Change in number of key enterprises in key industries with reasonable access to high-capacity highway
	Job creation & training	No metric identified
	Safety	Project addresses safety concerns at the system, corridor, and local levels
	Security	Level of redundancy for critical passenger and freight infrastructure

Metrics Level 4

All metrics from Level 3, plus the following additional metrics:

Board

Pillar	Topic	Metric
Economic	Economic viability	Cost benefit of NRA activity
	Innovation	No metric identified
Social	Accessibility	Change in the number of jobs within reasonable travel time (by mode) for NRA's population
		Change in number of key enterprises in key industries with reasonable access to high-capacity highway
		Change in travel time (by mode) to schools health services, grocery stores, civic and public spaces, recreation
	Global partnership	No metric identified
	Good governance	Share of agency staff that have received appropriate emergency training
	Public health	No metric identified
Environment	Renewable energy	Percentage of power generated using renewable sources

Programme

Pillar	Topic	Metric
Economic	Modal split	No metric identified
	System efficiency	Change in travel time index by class
		Net changes in jobs/income associated with transportation plan implementation
Social	Accessibility	Change in travel time (by mode) to schools health services, grocery stores, civic and public spaces, recreation
	Security	Capacity of parallel/redundant routes across all modes
Environment	Renewable energy	Percentage of power generated using renewable sources

Project

Pillar	Topic	Metric
Economic	Renewable energy	Percentage of operational power generated using renewable sources

Topics

The following section provides information on the metrics by topic. (The topics are shown alphabetically.) To find out which level the metrics are required at please refer to the previous pages of this report.

The following coding by each metric indicates its source:

E(xisting) – The metric is currently being measured.

R(ecommended) – The metric is recommended for use by the TRB or other research.

N(ew) – The metric has been suggested by the research team.

Topic 1 – Accessibility

Pillar: Social

Project Metrics: Change in the number of jobs within reasonable travel time (by mode) for NRA's population due to selected project alternative (R) **and** change in number of key enterprises in key industries with reasonable access to high-capacity highway (R) **and** change in travel time (by mode) to schools, health services, grocery stores, civic and public spaces, recreation (R)

Programme Metrics: Change in the number of jobs within reasonable travel time (by mode) for programme's population (R) **and** change in number of key enterprises in key industries with reasonable access to high-capacity highway (R) **and** change in travel time (by mode) to schools, health services, grocery stores, civic and public spaces, recreation (R)

Board Metrics: Change in the number of jobs within reasonable travel time (by mode) for NRA's population (R) **and** change in number of key enterprises in key industries with reasonable access to high-capacity highway (R) **and** change in travel time (by mode) to schools, health services, grocery stores, civic and public spaces, recreation (R)

Topic summary: This topic is intended measure whether the transport system offers accessibility that allows people to fulfil at least their basic needs, such as access to employment, education, health services, and food shops. At the three levels metrics should be measured which look at the change in the number of jobs within reasonable travel time and the change in travel time to schools, health services, grocery stores, civic and public spaces and recreation. The topic also considers accessibility to major road network by key industries.

Topic 2 – Air quality

Pillar: Environment

Project Metrics: Emissions of PM_{10} during construction **and** emissions of PM_{10} due to road users (all operation roads) (E)

Programme Metrics: Emissions of PM_{10} across the programme (all operational roads) (E)

Board Metrics: Emissions of PM_{10} across the network (E)

Topic summary: This topic is intended to measure the environmental impacts of NRAs in terms of their emissions to air. The metric focuses on PM10 as this was found to be a priority for NRAs during the research. At the project level NRAs should measure emissions of PM_{10} during construction (ie as a result of construction activity) and emissions of PM_{10} due to road users. The programme metric requires measurement of emissions of PM_{10} across the programme. No metrics are considered necessary at the board level.

Topic 3 – Climate change adaptation

Pillar: Environment

Project Metrics: None required

Programme Metrics: Number and proportion of projects that have completed a climate change risk assessment (N) **and** number and proportion of projects that have implemented a climate change risk assessment (N)

Board Metrics: None required

Topic summary: This topic is intended to measure the resilience of an NRAs network and other functions/activities to climate change. At present there is no commonly used or agreed metric that covers this issue. It is considered that at the programme level the number and proportion of projects that completed a climate change risk assessment and the number and proportion of projects that implemented a climate change risk assessment could be measured. It is however suggested that metrics, at both project and programme level, are developed which could be used by NRAs. These metrics could be developed using the process outlined in the final report of the SBA KPI project.

Topic 4 – CO_2 emissions

Pillar: Environment

Project Metric: Carbon dioxide (CO^2) emitted during construction (E)

Programme Metrics: Carbon dioxide (CO^2) per year/ km NRA road network (E) **and** CO_2 emissions due to road users (E)

Board Metric: Carbon dioxide (CO^2) emitted by NRA and contractors per year/ km NRA road network (R)

Topic summary: This topic measures the environmental impact of NRAs in terms of their emissions of carbon dioxide. CO_2 in terms of warming of the climate is seen as the most important greenhouse gas. At the project level NRAs are asked to measure the emissions emitted during construction, at the programme level they are asked to look at the emissions emitted by the road network and road users. At the board level CO_2 emissions emitted by both the NRA and its contractors should be measured. The metric could be widened to measure CO_2^e, which includes emissions of other greenhouse gas, however as CO_2 is already being measured by NRAs, as found in the literature review, it was considered appropriate to leave it as is at present.

Topic 5 – Cultural heritage

Pillar: Environment

Project Metrics: No metric identified at present

Programme Metrics: No metric identified at present

Board Metrics: None required

Topic summary: This topic is intended to consider the impact of NRAs on cultural heritage, which was an issue identified as warranting measurement through the research. However, no suitable metrics have been identified which would cover the issue of the protection of cultural heritage. It is suggested that metrics, at both project and programme level, are developed which could be used by NRAs. These metrics could be developed using the process outlined in the final report of the SBA KPI project.

Topic 6 – Economic viability

Pillar: Economic

Project Metric: Construction/ maintenance costs as a proportion of planned budget (R)

Programme Metrics: Construction/ maintenance costs as a proportion of planned budget (R) **and** percentage of spend evaluated using whole life costing (N)

Board Metrics: Number of construction/ maintenance projects within planned budget (R) **and** cost per user/vehicle/ household of taxes and fees dedicated to transport (R) **and** cost benefit of NRA activity (R)

Topic summary: This topic is intended to measure actual costs against budgeted costs to ensure the economic viability of transportation investments over time. At the project level, construction or maintenance costs of an individual project are measured as a proportion of the planned budget, while at the programme level the construction or maintenance costs of a programme are measured as a proportion of the planned budget. At the programme level NRAs should also measure the percentage of spend evaluated using while life costing. At the Board level as well as considering the number of construction/maintenance projects within the planned budget, NRAs should also measure the cost per user/vehicle/ household of taxes and fees dedicated to transport and the cost benefit of NRA activity.

Topic 7 – Ecosystems

Pillar: Environment

Project Metrics: Percentage of habitats protected (E) **and** percentage of wildlife corridors protected (E)

Programme Metrics: Percentage of habitats protected (E) **and** percentage of wildlife corridors protected across the programme (E)

Board Metrics: None required

Topic summary: This topic is intended to measure the environmental impact of NRAs on ecosystems. At both the project and programme level the metrics are the percentage of habitats protected and the percentage of wildlife corridors protected. No metrics are considered necessary at the board level.

Topic 8 – Equity/equal mobility

Pillar: Social

Project Metrics: Ratio of disadvantaged to non-disadvantaged systems users experiencing delay due to construction activities (R) **and** ratio of disadvantaged to non-disadvantaged population benefiting from project (R)

Programme Metrics: Ratio of disadvantaged to non-disadvantaged population benefiting from programme (R)

Board Metrics: None required

Topic summary: This topic aims to provide a measure of how affordable and equitable transportation opportunities are for all sections of society. At the project level two measures are set, the first looking at the ratio of disadvantaged to non-disadvantaged systems users experiencing delay due to construction activities and the second looking at ratio of disadvantaged to non-disadvantaged population benefiting from project. At the programme level the ratio of disadvantaged to non-disadvantaged population benefiting from programme should be measured. No metrics are considered necessary at the board level.

Topic 9 – Global partnership

Pillar: Social

Project Metrics: None required

Programme Metrics: None required

Board Metrics: No metric identified at present

Topic summary: This topic is intended to measure an NRAs contribution to global partnerships which is an important aspect of sustainable development. This could include for example sharing knowledge with other NRAs or other transport organisations. No suitable metric has been identified at present. It is suggested that a metric, at the board level, is developed which could be used by NRAs. This could be developed using the process outlined in the final report of the SBA KPI project.

Topic 10 – Good governance

Pillar: Social

Project Metrics: None required

Programme Metrics: None required

Board Metrics: Share of agency staff that have received appropriate emergency training (R)

Topic summary: This topic is intended to give an indication of an NRAs contribution to good governance, which is an important aspect of sustainable development. At the board level NRAs should measure the share of agency staff that received appropriate emergency training.

Topic 11 – Innovation

Pillar: Economic

Project Metrics: None required

Programme Metrics: None required

Board Metrics: No metric identified at present

Topic summary: This topic is intended to measure an NRAs level of innovation, an important aspect of sustainable development. No suitable metric has been identified at present. It is suggested that a metric, at the board level, is developed which could be used by NRAs. This could be developed using the process outlined in the final report of the SBA KPI project.

Topic 12 – Job creation & training

Pillar: Social

Project Metrics: No metric identified at present

Programme Metrics: No metric identified at present

Board Metrics: No metric identified at present

Topic summary: This topic is intended to provide a measure of an NRAs level of job creation and training which is an essential element of ensuring sustainable transport. No suitable metric has been identified at present. It is suggested that metrics, at all three levels, are developed which could be used by NRAs. These could be developed using the process outlined in the final report of the SBA KPI project.

Topic 13 – Modal split

Pillar: Economic

Project Metrics: None required

Programme Metrics: No metric identified at present

Board Metrics: No metric identified at present

Topic summary: This topic is intended to measure an NRAs impact of modal split, which is an essential element of sustainable transport. No suitable metric has been identified at present. It is suggested that metrics, at both the programme and board levels, are developed which could be used by NRAs. These could be developed using the process outlined in the final report of the SBA KPI project.

Topic 14 – Noise

Pillar: Environment

Project Metrics: Number of dwellings exposed to excessive noise during construction (R)

Programme Metrics: Number of dwellings exposed to excessive noise (from all operational roads) (R)

Board Metrics: None required

Topic summary: This topic provides a measure of the noise levels during both construction (at the project level) and during operation (at the programme level). No metrics are considered necessary at the board level.

Topic 15 – Prosperity

Pillar: Economic

Project Metrics: Change in cost of shipment per ton/mile due to project (R)

Programme Metrics: Cost of shipment per ton/mile (R)

Board Metrics: Cost of shipment per ton/mile (R)

Topic summary: This topic is intended to provide a measure of an NRAs contribution to prosperity, for example how an NRAs network supports economic development. At the project level the metric to be measured is the change in cost of shipment per ton/mile due to the project. At both the programme and board level the metric is the cost of shipment per ton/mile.

Topic 16 – Public health

Pillar: Social

Project Metrics: None required

Programme Metrics: None required

Board Metrics: No metric identified at present

Topic summary: This topic is intended to measure an NRAs contribution to improving public health, an important aspect of sustainable development. No suitable metric has been identified at present. It is suggested that a metric, at the board level, is developed which could be used by NRAs. This could be developed using the process outlined in the final report of the SBA KPI project.

Topic 17 – Renewable energy

Pillar: Environment

Project Metrics: Percentage of operational power generated using renewable sources (R)

Programme Metrics: Percentage of power generated using renewable sources (R)

Board Metrics: None required

Topic summary: This topic is intended to give an indication of an NRAs contribution to climate change mitigation by measuring use of renewable energy. At the project level the metric is the percentage of operational power generated using renewable sources, while at both the programme and board level the metric is the power generated using renewable sources.

Topic 18 – Resource consumption and waste

Pillar: Environment

Project Metrics: Amount of waste generated by type weight and or volume (N) **and** amount of construction waste set to landfill by type, weight and/or volume (N) **and** amount of hazardous waste generated **and** percentage of recycled material used as a percentage of total material (N)

Programme Metrics: Net material sent to landfill across the programme (N)

Board Metrics: Net material sent to landfill across the network (N)

Topic summary: This topic is intended to give an indication of resource demands by measuring the amount of waste generated by NRA activities and the amount of recycled materials used. At the project level four metrics should be measured, looking at the amount of waste generated, the amount of waste sent to landfill, the amount of hazardous waste generated and the percentage of recycled material used as a percentage of total material used. At the programme level NRAs should measure the net material sent to landfill. No metrics are considered necessary at the board level.

Topic 19 – Road condition

Pillar: Economic

Project Metrics: None required

Programme Metrics: Percentage of network within the programme achieving good state of repair (E)

Board Metrics: Percentage of network achieving good state of repair (E)

Topic summary: This topic is intended to give an indication of the condition of an NRAs network, which can have implications on many of the topics, including for example noise, safety, resource consumption. No metrics are considered necessary at the project and board level. At the programme level NRAs should measure the percentage of the network achieving a good state of repair.

Topic 20 – Safety

Pillar: Social

Project Metrics: Killed or seriously injured (KSI) during construction (E) **and** accidents involving personal injury to workforce at construction sites (E) **and** project is evaluated for

effect on crashes (R) **and** project addresses safety concerns at the system, corridor, and local levels (R)

Programme Metrics: Number and proportion of projects evaluated for effect on crashes (R) **and** accidents involving personal injury to workforce at construction sites within the programme (E) **and** number and cost of projects that address safety concerns at the system, corridor, and local levels (R)

Board Metrics: Killed or seriously injured (KSI) (E) **and** accidents involving personal injury to construction workforce (E)

Topic summary: This topic considers the safety of both users and the construction workforce. At the project level metrics are set to measure the number of people killed or seriously injured (KSI) during construction, the number of accidents involving personal injury to workforce at construction sites, whether projects are evaluated for their effect on crashes and at the higher levels whether projects address safety concerns at the system, corridor and local level. At the programme level the metrics are set to measure the number of accidents involving personal injury to workforce at construction sites, whether projects are evaluated for their effect on crashes and at the higher levels whether projects address safety concerns at the system, corridor and local level. At board level NRAs should measure the total number of KSI across their network and the total number of accidents involving personal injury to construction workforce.

Topic 21 – Security

Pillar: Social

Project Metrics: Level of redundancy for critical passenger and freight infrastructure (R)

Programme Metrics: Level of redundancy for critical passenger and freight infrastructure (R) **and** capacity of parallel/redundant routes across all modes (R)

Board Metrics: None required

Topic summary: This topic is intended to give an indication as to whether an NRAs network is secure from, ready for and resilient to threats from all hazards. At the project and programme level NRAs should measure the level of redundancy for critical passenger and freight infrastructure. At the programme level a second metric of measuring the capacity of parallel/redundant routes should also be achieved.

Topic 22 – System efficiency

Pillar: Economic

Project Metrics: Travel time disruption during construction (R) **and** congestion reduction per lane KM due to project (R)

Programme Metrics: Volume/capacity ratio by functional class (R) **and** change in travel time index by class (R) **and** net changes in jobs/income associated with transportation plan implementation (R)

Board Metrics: None required

Topic summary: This topic is intended to give an indication of the systems functionality and efficiency. At the project level this means measuring travel time disruption during construction and the congestion reduction (per lane KM) as a result of the project. At the programme level NRAs should consider the volume/capacity ratio of their roads by functional class. At the highest level they should also measure the change in travel time index brought about by the programme by class, and the net change in jobs/income associated with transportation plan implementation. No metrics are considered necessary at the board level.

Topic 23 – User satisfaction

Pillar: Social

Project Metrics: None required

Programme Metrics: No metric identified at present

Board Metrics: No metric identified at present

Topic summary: This topic is intended to give an indication of user satisfaction. No suitable metric has been identified at present. It is suggested that metrics, at the programme and board levels, are developed which could be used by NRAs. These could be developed using the process outlined in the final report of the SBA KPI project.

Topic 24 – Water quality

Pillar: Environment

Project Metrics: Percentage of highway with managed drainage (R)

Programme Metrics: Percentage of highway with managed drainage (R)

Board Metrics: None required

Topic summary: This topic provides a measure of the level of managed drainage along a highway. This is intended to give an indication of the NRAs impact on water quality, which could be adversely affected as a result of poor drainage processes. At the project level the metric measures the percentage of highway within the scheme with managed drainage, while at the programme level it looks at the percentage of the entire highway network with managed drainage. No metrics are considered necessary at the board level.

Appendix A: Process for developing new or amending metrics

The SBA KPI project, completed in May 2012, produced a benchmarking framework which outlined a process for developing new key performance indicators (see Figure 2 below and the SBA KPI final report). It is suggested that this process could be used to fill the gaps within this framework.

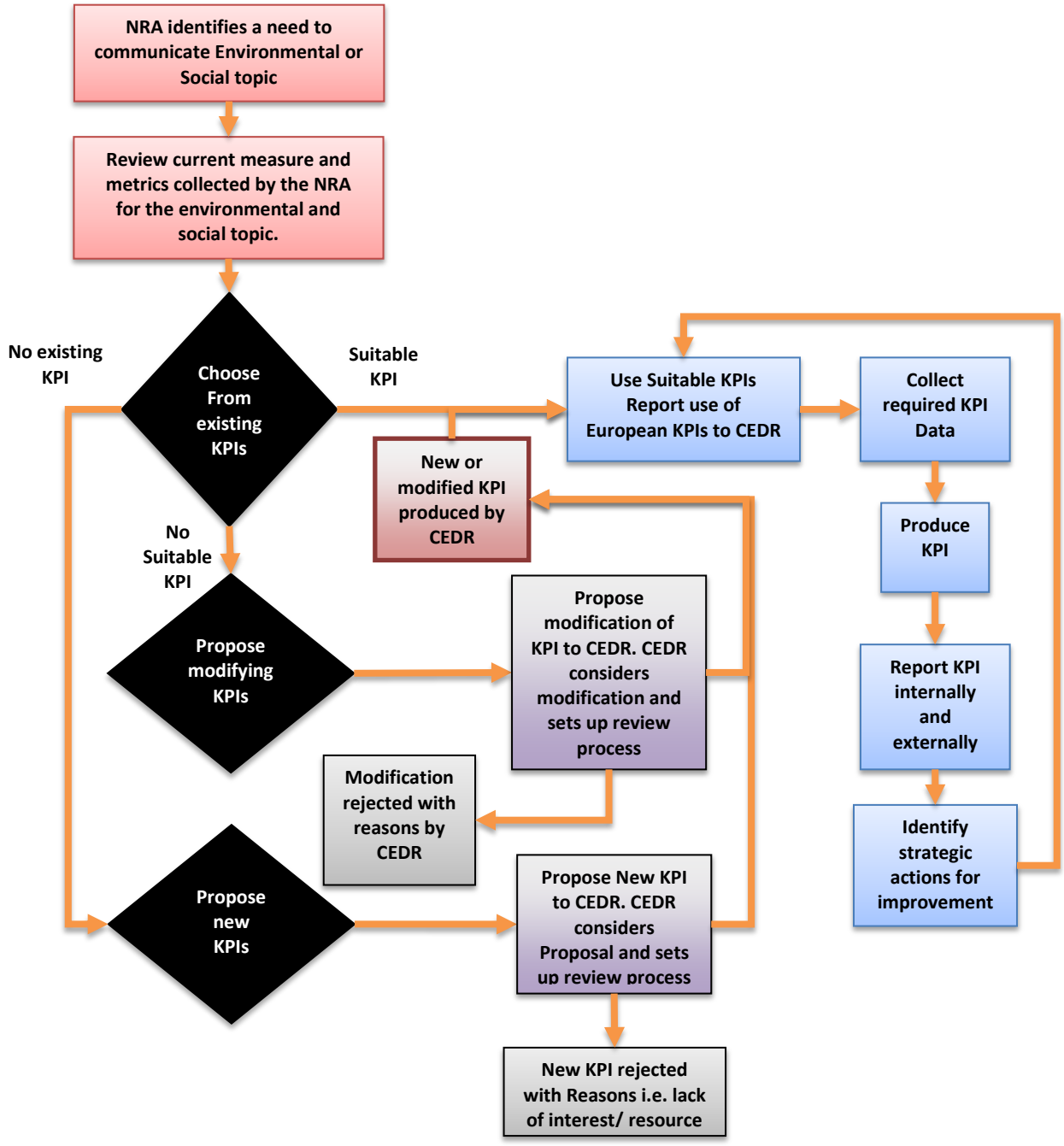

Figure 2: Process for developing a key performance indicator (Bond et al, May 2012)