

# **PERFORMANCE MANAGEMENT: IMPLICATIONS FOR WORLDWIDE USAGE BASED ON CASE STUDIES IN EUROPE, AUSTRALASIA, AND THE UNITED STATES**

Dr. Anthony KANE, Director  
Engineering and Technical Services  
American Association of State Highway and Transportation Officials (AASHTO)  
Washington, DC, USA  
[akane@aaashto.org](mailto:akane@aaashto.org)

&

Ms. Connie YEW, Team Leader  
Office of Infrastructure  
Federal Highway Administration (FHWA)  
United States Department of Transportation  
Washington, DC, USA  
[connie.yew@dot.gov](mailto:connie.yew@dot.gov)

## **ABSTRACT**

This paper discusses the results of an international scan on transportation performance management conducted in 2009 and follow-up studies, and then converts the key findings for application in the USA and PIARC nations to help government transport officials in governance and accountability.

The scan conducted in-depth reviews of how leading nations in performance management are transparent and accountable with published sets of goals and performance measures and how these measures are presented for consideration of agency budgets. Specifically the scan examined how other countries effectively grow, sustain, and deliver their transportation program. The countries visited are Sweden, England, Australia, and New Zealand. The follow-up studies were aimed at understanding the collegial governance model in Australia and how performance targets can be set and accounted for across independent state borders.

A number of key findings and lessons learned for all nations are highlighted and enumerated in the paper. Transportation agencies use performance measures to drive individual, agency, and transportation system performance. Communicating and reporting performance measure results in a format that the public and elected officials can understand is the key to success. These key findings are offered for possible uses by all nations—both developed as well as developing nations.

## **1. INTRODUCTION**

### **1.1 Paper Objective**

The objective of this paper is to discuss the results of an international scan on transportation performance management conducted in 2009 and follow-up study efforts. After that introduction, the paper converts the key findings for application in the USA and PIARC member nations to help government transport officials understand good practices in governance and accountability.



Figure 1 – Linking Transportation Performance and Accountability Report

The 2009 scan conducted in-depth reviews of how other nations are perceived as being very transparent and accountable with published sets of goals and performance measures and how these measures are presented for consideration of agency budgets. Specifically, the objective of this scan was to examine how other countries effectively grow, sustain, and deliver their transportation program. The follow-up study efforts were aimed at understanding the collegial governance model in these countries and how performance targets can be set and accounted for across borders.

The scanning study was conducted against a backdrop of three major transportation needs in the USA:

- Reauthorizing Federal legislation for transportation programs;
- Stabilizing the financially drained Highway Trust Fund that pays for highway and transit programs; and
- Ensuring greater accountability from State, regional and local recipients of Federal transportation funds

It should be noted that the situation is still unresolved in the USA at the time of writing this paper and the findings are as appropriate today as they were at the end of 2009.

## 1.2 Countries Visited

The countries visited are Sweden, England, Australia, and New Zealand. These countries were chosen because they have mature performance management systems in place to manage large transportation networks. All were parliamentary democracies, which may influence the degree to which their governments can rapidly change policy for the central transportation agencies. In addition, the overall governance model of Australia with strong states that own and operate the infrastructure within their borders is really quite similar to the USA. One strong similarity was that many of the agencies not only needed to carry out direct goals set by the central government, but they also needed to cascade those goals to many local agencies. As in the United States, many transportation services were provided by local government (that is below the state level in Australia or national level in the other countries) or private contractors.

## 2. KEY FINDINGS

### 2.1 Linking Transportation Programs To Government Goals

A direct linkage between what society expects from its transportation agencies and what they achieve was strongly evident in the case study agencies for four reasons.

**First**, the national or state government articulated clear goals for the transportation system. Policy goals or expectations, such as economic development, safety, environmental sustainability, or best value for the money, were set as broad national or state transportation goals. **Second**, the agencies negotiated service agreements that translated these broad goals into clearly articulated performance measures and targets. **Third**, the agencies' performance management systems reported their accomplishments in achieving the measures and targets. **Fourth**, the agencies continually refined their processes during more than a decade of performance management. Their officials cautioned that years of effort are needed to fully develop the performance management process.

The long-term plans the team saw tended to focus on policies, strategies, corridors, and general approaches to providing transportation, not on detailed long-term project plans. Plans that included specific, fiscally constrained lists of projects tended to be of shorter terms, such as 5 years.

### 2.2 Linking Budgets and Accomplishments

The agencies visited clearly documented system and organizational performance, often in detailed trends over many years. The richness of reporting and actions was usually quite sophisticated. The agencies demonstrated improved customer satisfaction, higher reliability in transit and highway travel times, reduced environmental impacts, and greater efficiencies. Their performance management systems naturally dovetailed with asset management systems. The agencies demonstrated a keen knowledge of system conditions, system trends, and finely calibrated system need estimates. Clearly, the agencies benefited from managing their performance to maximize resources, optimize assets, and earn credibility from legislators and budgeting agencies.

Despite those benefits to both legislatures and agencies, budget appropriations were for the most part not driven by the resources required to achieve specific performance targets. The scan team found no widespread evidence that legislatures or executive branch financial agencies establish asset investment levels based on data from performance management systems. Discussions indicated that this was because of overall funding constraints in competing public sectors, such as education and health care. It was not attributable to an ineffective performance management program or agency performance. In three of the six cases, agencies reported discouragement that they could not convince legislators to invest more in system preservation, despite their sophisticated documentation of need. Further discussion noted that identifying large maintenance funding gaps was a longstanding concern.

Similar to the United States, agencies had difficulty expressing the impact of changes in pavement and bridge condition at the political level. In all the nations visited however, the maintenance of their budgets was considered a success in light of other governmental needs such as health and education and national security. And most had some kind of stimulus program launched based upon the credibility of the agencies.

Central government decisions on agency operating budgets tend to remain incremental. System preservation increases were modest and based on incremental increases from past budgets. Budget decisionmaking for transport depended on whether the government had any residual revenue left once other priorities were met.

### 2.3 Transparency, Accountability and Emerging Issues

Noticeable throughout the scanning study were the large amounts of performance data the agencies produced. Their annual reports, service agreements with the central government, and midyear progress reports all were voluminous in the depth, scope, and scale of their performance reporting.

It was apparent that legislative and budget officials could evaluate the agencies' performance across a wide range of activities. They could produce results showing their accomplishments on highway asset conditions, highway and transit performance, environmental impacts, operating efficiencies, and public satisfaction with their agencies. The performance information was highly detailed and tended to track results over time. It was clear the agencies had fully embraced performance management as the framework for running their organizations.

#### 2.3.1 Reporting Documents Were Professionally Produced

The use of professionally produced reports for public information was common. The agencies produced annual reports, strategic plans, strategy reports, and other documents printed on magazine-grade paper stock, with full-color photography and advertising-quality graphics. While such high-cost reports may be criticized in many countries, they were commonly accepted in the countries the scan team visited as an appropriate means for conveying complex and important information to the public. All of the agencies produced a significant number of such publications each year.



Figure 2 – RTA Corporate Plan

One agency staff member said the agency uses the reports as a recruiting tool with young professional job candidates. The high quality of the publications, which depict the importance of the agency's work, illustrates the personal and professional rewards that can come from working for the organization, the staff member said.

### *2.3.2 Performance Reviews*

Reviews of the agencies' performance were common. These reviews were often required through statute or regulation, such as the quarterly progress reports Sweden Road Administration (SRA) provides to central government budget officials in Sweden. The Results and Service Plans in New South Wales and the Statements of Intent in New Zealand also were followed with regular progress reports to central officials throughout the year. Agency officials said that the updates keep the agency focused on results, but that they also have other important benefits. They said regular reporting to central agencies tends to increase the central officials' understanding of the issues, needs, results, and constraints confronting the agency.

SRA officials meet with budget officials monthly. Formal quarterly reports are required on their progress toward the annual operational plan. However, the reporting sessions tend to involve more informal dialogue than formal review of detailed performance metrics, SRA officials said. Instead of penalties for failing to meet a specific target, the discussion usually focuses on factors that influenced actual performance.

A New Zealand transportation official made similar observations about the importance of regular reporting to ministry officials. "Many of these communications are formal and informal. Much of our interaction is heavily dependent upon the trust and dialogue between people. It takes trust for government to say, 'We'll leave these decisions up to you.' Letting agencies have large budgets and influence does require a high level of trust in making these decisions."

The agencies commonly hold regular internal update meetings in which agency managers report on progress on agency goals. For example, the SRA uses a Balanced Scorecard tracking process at all levels of the organization. All major aspects of the agency's Balanced Scorecard reporting are also tracked on the agency intranet. SRA also has invested in intense leadership training with small groups of managers to ensure they understand the performance management framework of the organization.

In all of the agencies visited, performance audits were common and were usually required by law. The countries or states had Treasury officials or auditors generally charged with the performance audit function. The auditors published reports and recommendations, which were incorporated into the management priorities for subsequent years.

## *2.4 Reorganization and Refocus*

The six agencies visited were in a state of transition – in terms of both their organization and their basic mission.

### *2.4.1 From Building Highways To Moving People*

Three of the six agencies the scan team visited were in the process of reorganizing to merge the highway division with the state or regional transit agency. The mergers were driven by a central government desire to move from a traditional highway-centric approach to a broader, more inclusive strategy of surface transportation planning.

"We are moving people, we are serving business, and we are moving freight. We are no longer in the business of just moving cars, or counting cars. It is all about allocating road space." said a New South Wales official.

"We are a travel agency. That is what we are involved with. It is not just the road," said an SRA official. "We are community builders."

"The most important message was that we are the road authority, but we manage the transport network as one network that includes roads, buses, and trains. More and more, we are doing integration," said a VicRoads official in Melbourne. "From a road authority perspective, we can't build enough roads. If we did, it would not be a city anyone wants to live in. We need to manage the demand in travel."

The cause and effect of the agencies' performance management systems and their shift to holistic transportation agencies were not entirely clear. It appeared that the agencies' forecast of continuing degradation in travel time pushed them beyond strategies of only expanding highways. The agencies placed great emphasis on transit service, rail passenger service, land use integration, and moving people and freight as well as vehicles.



Figure 3 – Traffic congestion on Great Britain's M25

The agencies' refocus from just highways to a more diverse, integrated transportation network appeared to be driven by several factors. Public complaints about highway congestion combined with public reluctance for new highway capacity have driven some to emphasize transit options. The agencies' forecast on travel time reliability caused them to question whether they can add sufficient highway capacity to accommodate such growth.

#### *2.4.2 Social, Environmental Goals Are Evident*

Closely related to the integrated transportation planning and delivery approach is the agencies' focus on environmental issues. All of the agencies visited had greenhouse gas emission reduction strategies as part of the performance measures focused on environmental concerns. Officials in all of the visited agencies said that climate change concerns were so important to the public that they were a driving factor in government policy, including transportation policy.

All of the agencies examined demonstrated a strong commitment to addressing climate change, even if they acknowledged they lack the strategies to achieve the ambitious long-term carbon-reduction goals their nations have established. Despite their strong commitment to addressing climate change, none of the agencies faced mandates to reduce miles or kilometers traveled. Their transportation-related climate change strategies

relied on other tactics, such as improving vehicular fuel efficiency, reducing use of electricity in lighting and buildings, and encouraging non-automobile passenger travel.

"Building a greener future means that low-carbon travel must be a genuine, viable, and attractive option for businesses and ordinary citizens," said the British secretary of state for transport in the Department for Transport's report, *Low Carbon Transport: A Greener Future*. "It does not mean government dictating which particular mode of travel people should use. Instead, what I want is to widen the options so that it is easier and a natural part of life for people—and businesses—to go for a low-carbon option."

#### *2.4.3 Cross Cutting Coordination*

A related finding from the agencies was that they appeared to work more frequently with other cabinet agencies on cross-cutting issues, such as economic development, public health, and climate change. In part, this appeared to be the result of multiple agencies sharing responsibility for crosscutting policy goals.

In Sweden, the SRA focus on environmental sustainability, reduction in greenhouse emissions and gender equality is influenced by a cabinet form of government in which government decisions are formed by consensus among all cabinet ministers. As a result, the concerns of the Ministry of the Environment and Ministry for Enterprise have significant influence on SRA policies.

The British Department for Transport shares responsibility for climate change with the Department of Health; Department for Children, Schools, and Families; and Department of Energy and Climate Change. The Public Service Agreements in Great Britain specify a lead agency, but also specify supporting agencies that are required to coordinate their efforts to achieve the goals.

In New South Wales, the Roads and Traffic Authority (RTA) is clustered in the state cabinet in the Employment and Economic Development portfolio, which includes the agencies of Planning, Transport, and Industry and Investment. In its State Plan, responsibility for cross-cutting issues such as environmental sustainability and economic development is parsed among different cabinet agencies, which are expected to cooperate on joint initiatives. [1]

In the USA, the U.S. Department of Transportation, U.S. Department of Housing and Urban Development, and U.S. Environmental Protection Agency announced the formation of an interagency Partnership for Sustainable Communities in June 2009. This action marked a fundamental shift in the way the federal government structures its transportation, housing, and environmental policies, programs, and spending. The three agencies are working together to support urban, suburban, and rural communities' efforts to expand housing and transportation choices, protect their air and water, attract economic growth, and provide the type of development residents want [2].

### **3. IMPLICATIONS FOR WORLD-WIDE USAGE—Lessons Applicable for the USA and Other Nations**

Some key lessons learned applicable for the USA and all nations include:

#### **3.1 Less Is More**

National governments should focus on a few, key national policy goals and measures. In the nations visited the only goal area that was clearly spelled out at the parliamentary or minister level in every country was highway fatalities. In addition, in the EU countries green house gas goals were articulated. All the agencies, however, have similar categories of measures that they manage/lead with including those for highway safety; asset preservation; mobility and travel time; and, all were struggling with trying to get better measures for economic growth vis-à-vis road investment or network coverage. For example in the USA, it appears that the areas of safety and state of good repair of road, bridge and transit assets might be defined in federal law and for other areas such as the environment/livability/congestion/mobility/accessibility, there needs to be more of a collaborative process with all the sub-national units of government and transit properties as well as highway agencies [3].

There are good lessons from the many state DOTs in the USA as well. For example, the state of Virginia many years ago put an emphasis on construction project time and cost to rebuild the trust of elected officials. They created a dashboard report that was updated daily to track every active construction project. This was a successful effort—the dashboard has been expanded to include outcome measures in addition to output measures [4c].

Other successful states in performance management include; Minnesota; Missouri and Washington. Their websites explain their efforts [4a, b and d].

#### **3.2 Agencies Responsible For Assets Set Targets**

National governments should set strong visions and national policy goals and let those responsible for owning and operating the systems set the targets. For example, the success in Australia with safety performance is that the individual states set their own aggressive targets, but all share a common theme such as halving fatalities over an extended period of time [5]. Note that the states in the USA—through AASHTO, have established the same aggressive goal among the states in 2007—on their own. In addition, the fiscal year 2012 budget proposal of the Federal Highway Administration, which was submitted to the US Congress on Feb.14, 2011, sets national goals in pavement, bridges and safety and calls on states to set appropriate targets [3].

To insure accountability and transparency, National governments or sub national governments collectively should publish results in a uniform fashion annually. An example of safety performance in Australia is shown in the following table published by Austroads for all the states and territories [5].



The Table 1 below is an updated extract (including 2009 data) from the 2009/2010 National Road Safety Strategy Action Plan document indicating the different rates of improvement achieved in jurisdictions to September 2008 [5].

Table 1 – Road fatality rates per 100,000 population

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Aust
1999	9.0	8.2	9.0	10.1	11.8	11.2	25.4	6.1	9.3
2000	9.3	8.6	8.9	11.0	11.3	9.1	26.1	5.7	9.5
2001	8.0	9.2	8.9	10.1	8.7	12.9	25.3	5.0	8.9
2002	8.5	8.2	8.7	10.1	9.3	7.8	27.6	3.1	8.7
2003	8.1	6.7	8.1	10.3	9.2	8.6	26.5	3.4	8.1
2004	7.6	6.9	8.0	9.0	9.0	12.0	17.3	2.7	7.9
2005	7.5	6.9	8.3	9.5	8.1	10.5	26.7	7.9	8.0
2006	7.3	6.6	8.2	7.5	9.9	11.2	21.8	3.9	7.7
2007	6.3	6.4	8.6	7.8	11.1	9.1	27.0	4.1	7.6
2008	5.3	5.7	7.6	6.2	9.6	7.8	34.0	4.0	6.7
2009	6.4	5.3	7.5	7.3	8.5	12.7	13.7	3.4	6.8
Ave. annual change	-4.5%	-4.7%	-1.6%	-4.8%	-1.4%	-0.1%	-2.1%	-3.2%	-3.3%

Note: Annual rates in smaller jurisdictions (Tasmania, Northern Territory and Australian Capital Territory) can change substantially from year to year because of the relatively low fatality numbers compared with larger jurisdictions. Average annual change is based on the exponential trend for the ten 12-month periods from 1999 to 2009.

### 3.3 Carrots versus Sticks

National governments should use incentives rather than disincentives. National governments can encourage innovation of strategies within their sub-national jurisdictions. For example, training opportunities and peer to peer meetings of technical staffs should be encouraged as a way to bring about better performance. Monetary penalties were not experienced in any of the countries visited and it is thought to be counterproductive. From Sweden to New Zealand the message was carrots versus sticks, incentives versus penalties and dialogues versus dictates. Higher levels of government should have reports made to them on a regular basis. When improvement was needed in performance, the solutions were usually through increased resources or training, benchmarking, peer exchanges, and local area staff development.

### 3.4 Do It With Them and Not To Them

Collaboration is key among and across governmental levels. For example, to achieve meaningful fatality reduction targets in any country, national or federal leaders and state/provincial leaders must have frequent policy level meetings—twice a year at a minimum, to discuss trends/issues/choices. To achieve meaningful results in metropolitan areas, the national/provincial and local officials must collaborate on the goals and metrics that are important—whether they are for the environment, the economy, the transport assets, or the traveler/system user, such as the journey to work time, and the reliability of that travel time.

### 3.5 Means Not An End

Performance measurement is one of multiple decision tools. Decision makers need hard evidence of the success of different transport strategies to achieve desired ends. Other tools include: value for money assessments; benefit cost analysis; cost effectiveness analysis; and rate of return estimates. In addition, it is clear that there are many other sources of input besides modeling and factual data that help drive decision makers. Public input processes and local planning boards often carry the crucial votes.

### 3.6 Communicating Results

Communicating and reporting performance measure results in a format that the public and elected officials can understand is the key to success. Glossy reports are often used—in some cases as a way to better recruit people to the organization. The reports to the public need to be in terms that they understand. For example, periodic reports to the public might talk about progress (or lack thereof) in providing the journey to work or home rather than detailed congestion information. The state of Washington has gotten sophisticated in its messaging about performance—they call it performance story telling (4d).

### 3.7 Collaborative Benchmarking

Transportation agencies use performance measures to drive individual, agency, and system performance. Based on experiences of the nations visited as well as follow-up studies performed in Australia, and the USA, benchmarking performance measures leads to innovations and improvement.

Austrroads has been doing performance measurement since 1993. In a December 2010 report, they note that success of benchmarking the States and territories of Australia and the Commonwealth of New Zealand hinges on a number of principles which other nations of the world might adopt [6]. These principles include:

- building the need to do it
- be proactive—but remember that it takes time to get reliable indicators
- build collaborative approaches
- move forward without complete consensus
- accept central coordination
- decouple from funding decisions
- aim for long-term improvement
- accept surrogate measures
- qualify data for differences
- accept local agency interpretations
- embrace review
- drive success through flexibility

The United States is starting on a benchmarking effort among the state DOTs using comparative performance measures. AASHTO will look to the lessons learned from Austrroads as the states in the USA advance on the performance management journey.

As PIARC member countries get more into accountability and transparency with performance measures they might look to collaborate with geographically close entities. Such efforts have already been initiated in the Nordic countries; Canada—with its many provinces and territories; and the EU nations that the authors know of. Potential exists in

other parts of the world—such as sub-Saharan Africa; South America; Central America; Mexico and its many states; the Asian nations; etc. Much can be gained.

#### 4. CLOSING

At a time when the United States works to define a Federal-State-regional-local framework for transportation performance management, the international examples hold many clear lessons. The performance management systems of the studied agencies showed clear linkage between governmental goals and transportation performance. The agencies demonstrated cost-effectiveness and continued improvement. They displayed responsiveness to emerging social concerns, such as climate change and urban sprawl. They clearly established the condition of their assets and the future consequences of current investments. The overall impression the scan team gathered from meetings with six leading performance management agencies is that similar performance practices could be implemented effectively in the USA.

Similarly, we argue that the same lessons can be shared with other nations both developing and developed. The lessons all deal with how attempts at performance management tend to begin, why they succeed, how they fail, and how they evolve.

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