1. ENGLAND: The Highways Agency

Introduction

The Highways Agency (HA) came into being on the 1st April 1994. It is responsible for the management and maintenance of the 6,600 mile motorway and trunk road network in England, delivery of the Secretary of State’s programme of trunk road improvement schemes and for policy relating to these functions. The Agency was created out of the former Highways, Safety and Traffic Command of the Department of Transport and is now an Executive Agency within the Department of the Environment, Transport and the Regions (DETR). The total number of staff currently employed by the Agency is 1700 and its annual budget is $3 billion.

Advisory Board

The Secretary of State is the Highway Authority and has appointed an Advisory Board to advise on the strategic direction of the HA, especially the Agency’s Corporate and Business Plans and its performance against these plans. The Board is chaired by the Permanent Secretary and consists of the HA’s Chief Executive, three members of the DETR and two external members.

Management Structure

The HA is headed by a CEO who is supported by a team of five executive board members. The CEO’s office contains four staff and is assisted by a Public Relations Unit with ten staff. The Directors cover the following business areas:

- **Network and Customer Services**: responsible for the operation and maintenance of the existing network, including supervision of Maintaining Agents and Term Maintenance Contractors, liaison with road users and development control;

- **Project Services**: responsible for supervising the planning, design and construction of all network improvement and major maintenance projects;

- **Quality Services**: responsible for producing and managing highway standards, providing technical advice to the operational directorates and a technical audit role for projects on behalf of the Board;

- **Financial Services**: responsible for all financial accounting, overall business control, financial audit and IS/IT services;
Human Resources: responsible for personnel and resource management and training.

Highways Agency: Strategic Aim and Key Objectives

On 20th July 1998, the Labour Government published the Integrated Transport White Paper (available from the DETR’s website - http://www.detr.gov.uk/). The White Paper has given the Highways Agency a new role as network operator. Traditionally the Highways Agency has been an assett manager of the motorway and trunk road network. The network operator role widens the Agency’s remit to include traffic management (monitoring and influencing the movement of people and goods using the network) and operational management (managing resources to meet customer needs and facilitate integration). The new strategic aim and key objectives are:

Strategic Aim

To contribute to sustainable development by maintaining, operating and improving the trunk road network in support of the Government’s integrated transport and land use planning policies.

Key Objectives

To give priority to the maintenance of trunk roads and bridges with the broad objective of minimising whole life costs;

To develop its role as network operator by implementing traffic management, network control and other measures aimed at making best use of the existing infrastructure and facilitating integration with other transport modes;

To take action to reduce congestion and increase the reliability of journey times;

To carry out the Government’s targeted programme of investment in trunk road improvements;

To minimise the impact of the trunk road network on both the natural and built environment;

To improve safety for all road users and contribute to the Government’s new safety strategy targets for 2010;

To work in partnership with road users, transport providers and operators, local authorities and others affected by its operations, monitoring to promote choice and information to travellers and publishing information about the performance and reliability of the network;

To be a good employer, managing the Agency’s business efficiently and effectively, seeking continuous improvement.
Highways Agency: Business Plan and Annual Report

Each year the Agency agrees a business plan with Ministers detailing specific and measurable tasks in support of the Agency’s key objectives and then publishes an annual report, including accounts, detailing performance against objectives and targets. Visit the Highways Agency Web site at http://www.highways.gov.uk/ to read an Annual Report and a Business Plan.

Highways Agency: Personnel Policies

The CEO is selected by open competition and employed on a fixed term performance related contract. The remaining staff are civil servants employed on the same terms and conditions which apply within the DETR. Changes to these terms and conditions are possible, but only after consultation with the DETR, Treasury and the Office of Public Service within the Cabinet Office.

Highways Agency: Finance and Audit

The Agency is subject to normal government Public Expenditure Survey (PES) and Supply Estimates, cash limits and vote accounting procedures. The recent announcement about PES means that the Agency’s budget is now agreed on a three year and not an annual cycle. The CEO is the Accounting Officer with the delegation to authorise expenditure in accordance with the vote.

Internal Audit is part of Finance Services and reports directly to the CEO. The unit produces an annual report which is copied to the head of Internal Audit at the DETR who carries out periodic checks to confirm that the internal audit arrangements meet GIAM standards. The HA’s accounts are subject to external audit by the Comptroller and Auditor General.

Highways Agency: Future Developments

The transition to a network operator will have the most impact on NCS and PS. NCS will become responsible for establishing the level of service required on the network and PS will ensure delivery of that service. QS is moving from a technical audit role to a provider of guidance and advice. FS is moving to develop financial accounts based on an accrual basis (balance sheet, income and expenditure account and cash flow statement) which will also include a reconciliation of the Appropriation Accounts. HRS is moving from its traditional personnel management role to resource planning and management.
2. SWEDEN: The Swedish National Road Agency

(Prepared by Ole Sylte)

1.1 Background. The Swedish road network consists of (1995) about 97 908 km of state roads, 38 200 km of municipal roads and 283 913 km of private roads. These three categories of road carry about 70%, 26% and 4% of total transport respectively. The national roads are divided into national trunk roads (8029 km), county roads (83 263 km) and other national roads (6 616 km). About 73 913 km of the private roads receive financial support towards maintenance, on average about SEK 10 000 per km per year. The public road network in Sweden is managed by two road agencies; i.e. the SNRA and the municipalities. The total budget for SNRA was for 1995 SEK 19.4 bn (US$ 3 bn). Total number of registered vehicles in Sweden is 7 005 414 (1995), giving a car ownership ratio of about 1.25 persons per car.

1.2 Demand. The transport sector in Sweden accounts for about SEK 200 bn (1995), or about 13 per cent of GDP. The total expenditure for SNRA was for the same year SEK 19.4 bn, or less than 10 per cent of total transport cost. Of all personnel transport, 89 per cent was on road. More than half (51%) of all goods transport, in tonkm, was on roads. Traffic on public roads increased in 1995 by 1.9 per cent.

1.3 The Restructuring Process. The Board of SNRA was in 1990 mandated by the Government to recommend on a new organization for the state road agency. The recommendations were endorsed by the Government in May 1991. They implied that a clear separation should be made between the two major functions; that of road management on one side and the production part (i.e. force account operations of construction and maintenance) on the other. This was done by creating two Divisions accountable for their own budget and financial accounts towards the Director General. The Road Management Division included all planning, design (all design and specification of the different "road products") and procurement of production. The Production Division included all road production for new roads and maintenance. The activities of the Production Division should be self financed mainly through contracts with the Road Management Division. A third division was also created, called the Commercial Division, managing commercial entities owned by the SNRA as subsidiary companies such as the international consultants SweRoad. Other subsidiary companies of SNRA include five financing companies, mainly set up for financing of special projects such as the crossing over to Denmark from Sweden, and a company specialising in systems for road condition surveys and analyses, called RST Sweden AB. The Government has decided that RST Sweden AB should be disengaged from public ownership in the near future.

1.4 The Government decided in December 1995 to revoke its previous decision to fully commercialize the Production Division into a limited company, a legal entity, by January 1, 1966. It means that the Production Unit should until further notice be managed as a public entity. However, the Government stated that the Production Unit should be self financed and subjected to market competition. The share of activity subject to competition should be
successively increased and should even for the maintenance part reach 100 per cent within three to four years, i.e. by 1998/99.

Present Road Management Structure.

1.5 Objectives. The overall objective of SNRA has been defined by the Government to be:

"To provide the public at large and the productive sectors in different parts of the country with a satisfactory, safe and environmentally friendly traffic service at the least socio-economic cost". (Translation from Swedish).

The Government has decided that the SNRA shall have the sector responsibility on behalf of the state for environmental impact of transport, traffic safety, accessibility, transport capacity, road statistics, vehicles, public transport, adaptations for disabled persons, commercial transport, research and development.

1.6 Scope. The scope of SNRA’s assignment for the state include four main functions:

(i) Sector functions: Defined as the activities needed in addition to regulatory functions, road management and production to achieve the objectives given by the government for the development of the sector;

(ii) Regulatory functions: The regulatory functions would include preparation and adjustment of regulations for vehicles, driver licenses, traffic environment and commercial transport, handle the state subsidies for private roads and manage a country wide register for driver licenses, vehicles and commercial transport etc.;

(iii) Road Management functions: In the role as employer/client the SNRA should develop and manage the public road network, and should also supervise the road management of the municipalities.

(iv) Production functions: Carry out design, construction, operation and maintenance as procured by SNRA or others.

1.7 Organization.

To carry out the functions described in paragraph 1.6 above SNRA has been organized under six headings that are each described further below:
1.8 **The Board.** The SNRA is managed by a Board consisting of no less than five (5) and not more than nine (9) persons, including the General Director. The Board members are appointed by the Government for a certain period. The Board has a Chairman also appointed by the Government and a Vice Chairman elected among the board members. In addition to the members appointed by the Government, three (3) representatives elected from the SNRA’s personnel have the right to attend board meetings and take part in board discussions. The Board can make binding decisions only when the Chairman is present and at least half the number of additional board members.

1.9 The present board members include one politician (chairperson), the DG, director general of the public data inspection, one private production company, one representative of the cycle association, one politician from the municipalities, one member of parliament, one from Lunds University (Transport Research), three elected as representing the staff.

1.10 **Internal Audit.** Internal Audit is independent of the Board for review and evaluation of all activities of the SNRA, including the result units. The internal audit reports directly to the Board. (The Internal Audit used to report to the Director General, but this was changed fairly recently due to some controversial actions by the top management).

1.11 **The Director General.** The Director General (DG) is responsible towards the Board for all activities of the SNRA in accordance with directives and strategies given by the Board. When the DG is unable to perform his duties, the duties can be carried out by his appointed deputy. The DG decides on all matters that do not need to be referred to the Board, or to the committee for staff interests, and may in general delegate authority within the administration.

1.12 The DG has a secretariat which includes secretary and some other support functions. Staff Directors have controller functions for areas that are decided by the DG, and would vary over time. The Staff Directors are directly responsible towards the DG and have as main function to support the DG in questions of strategic importance within their respective areas. At present seven (7) Staff Directors are appointed within the fields of : Disability
issues, information technology, equality issues, quality assurance, road construction, road maintenance, and organizational coordination.

1.13 The International Secretariat supports the DG directly and coordinates the international relation functions within SNRA in general.

1.14 The Management Groups of the DG have no formal decision making powers, but are group of persons that together with the DG develop strategies and direction of the corporation and discuss issues of special concern and importance for the road administration. The DG has both a "Direction" (Board of Directors) and a Chief Management Group at his disposal. The "Direction" consists of the DG and the seven Regional Road Directors. The Chief Management Group consists of the seven Staff Directors, the Regional Road Directors, and about fifteen (15) line /division directors.

1.15 The HEAD OFFICE (HO). The HO should within the frame of the road administration's responsibility for the road transport systems environmental aspects, traffic safety, accessibility, transport capacity etc:

- coordinate and ensure a goal oriented approach within the sector
- ensure SNRA’s part within the sector functions and regulatory functions, road management and production
- prepare strategic plans for the sector
- prepare background documentation for the government and recommend on objectives, strategies and management within the sector
- responsibility for development of human resources within the sector
- give professional advice to the regional road units and external interests
- ensure effectiveness, coordination and uniformity of approach
- give management support
- monitor external activities of interest.

The HO includes a number of units described below, each with a responsible Head of Unit.

1.16 The Traffic Unit would deal with:

- issues connected with road traffic safety
- responsible for strategies, direction, preparation of programmes and for monitoring and evaluation of traffic safety measures
- responsible for SNRA’s traffic safety programme and monitoring

1.17 The *Environmental Unit* deals with:
- issues concerning environmental impact of road transport
- environmental sector issues
- SNRA’s environment programme and reporting

1.18 *The Road Transport Planning Unit* would be responsible for:
- monitoring and reporting on sector development
- strategic planning of the road transport sector
- issues related to development planning

1.19 *The Unit for Sector and Regulatory Issues* would be responsible for:
- digital road data base, transport system information
- transport users pressure for improved effectiveness
- heavy traffic and vehicle weight and dimensions
- vehicle condition and
- drivers licenses, drivers training
- vehicle licenses
- road classification

The unit has six (6) sections; (i) road information and traffic management; (ii) public transport; (iii) vehicle section; (iv) driver license; (v) traffic registration; and (vi) road and traffic laws.

1.20 *The Unit for Public Road Management* would be responsible for:
- road management planning; log term plans for maintenance and investments
- monitoring of investment projects
- methods, models and guide lines for design, construction and maintenance
- bridge classification
- the planning process; i.e. feasibility studies, road plans, detail design and construction documents
- methods and systems for road condition analysis
- support to municipalities
- condition surveys
- issues related to procurement

1.21 The *Economy and Finance Unit* would be responsible for:
- development within the field of economy and financing
- measures to improve efficiency and productivity
- budget preparation for the Government
- business plans and monitoring
- annual reporting
- policies on taxes

1.22 The *Personnel Unit* of the Head Office is responsible for strategic planning of the personnel development in general, but each line manager is also directly responsible for personnel.

1.23 The *Information Unit* is responsible for information to the public.

1.24 The *Unit for Competence and Development* is responsible for:
- legal issues
- procurement
- archive and registration
- people and road transport
- traffic and traffic safety analysis
- traffic and environment
- functioning of bridges, road pavements
- research and development
information technology

The unit has ten (10) sections.

1.25 **The RESULT UNITS.** The result units have all a high degree of autonomy but are part of the SNRA. As such they are governed by the laws and regulations applicable for the public service in general and the rest of the road administration in particular. The SNRA has five (5) autonomous result units directly under the Director General. The result units have their head offices at the same premises as the SNRA's Head Office. The Director of each result unit is responsible to the Director General for the activities of the unit. The Director of a unit is supported by an Advisory Committee, which includes not more than eight (8) members of which five (5) are appointed by the DG for a period of not more than two years each. The committee elects its own chairperson. It should have at least four meetings per year. The Director of a result unit is appointed by the DG after consultations with the Advisory Committee.

1.26 The Director of each result unit, in consultation with its Advisory Committee, shall for each budget year (follows the calendar year) prepare and present for the Annual Meeting, to be held at the latest April 1, each year the following information:

- operational accounts, balance sheet and financial analysis
- recommend dispositions of profit or loss
- budget and profit/loss prognoses for next year

The right to meet at the Annual Meeting is limited to the Director General, or a person appointed by him, the unit Director and the members of the Advisory Committee. The Director General, or the person appointed by him, takes the decisions at the Annual Meeting. In case of disagreement, the Director has the right to protocol his opinion.

1.27 It follows from paragraph 1.26 that the procedures of the Annual Meeting for each of the result units follow closely the procedures stipulated by law for a private limited company (in Swedish an "AB"). The Annual Meeting has no powers to decide, as would be the case for a limited company. The Director General of SNRA therefore acts on behalf of the owner as the General Assembly. The accounts of the result units are audited either by the Auditor General or by an independent auditor appointed by the Auditor General.

1.28 The result units have a high degree of autonomy within its mandate and the objectives and goals, and shall be totally self financed. The pricing of service should be governed by free competition and full cost coverage. The result units have the right to take loans and place access liquidity with the Economy Unit in the Head Office.

In order to ensure a level playing field vis a vis the private market, each year's profit will be deducted an amount commensurate with a corporate tax on profit, and placed in the
account of the Economy Unit. An internal Risk insurance should also be established, and the units should be responsible for all pensions of its own personnel and staff.

1.29 Result Unit *Ferries (F).* The Ferry Unit manages domestic road ferries on contract basis with the SNRA's Regions, and external clients according to current regulations. It is run on commercial basis with a reasonable degree of self financing for investment in new ferries.

1.30 Result Unit *Consultancy (K).* The Consultancy Unit carries out planning and detail design of transport infrastructure, including mapping, systems development, construction supervision, quality control and general advisory services. The main clients are SNRA's regional units, the Production Unit, the railway, the aviation department, municipalities and private road agencies. The unit is allowed to carry out external assignments. The Consultancy Unit is organized in one central office, seven regional offices and a number of local offices.

1.31 *The Production Unit (P).* The Production Unit is engaged with civil engineering activities of construction and maintenance within the sub sectors of roads, railways, airfields, ports, parks and water and waste projects. The main clients are SNRA's regional units, the railway, the aviation department, municipalities and private road agencies. The unit is allowed to carry out external assignments. The Production Unit is organized with one central office and three (3) production areas; *Production Area North, Production Area Middle* and *Production Area South.* The central office contains sections for management, finance, technology, information, procurement and personnel.

1.32 As a result of a reorganization initiated by the Government at the end of year 1995, the Production Division was substituted by the autonomous Result Units; i.e. Production, Consultancy, Ferries, Traffic and VUC. The final step towards a commercial model, with production units created as legal entities, was not taken as the decision was revoked by the Government. However, quite forceful steps have been taken by the Government to ensure market competition and a level playing field vis à vis the private competitors. About sixty per cent of all income/activity of the Production Unit for 1995 came from contracts won in competitive bidding. All new construction work carried out is already subject to competitive bidding. It has also been decided that the turnover of the Production Unit should in future years be accounted for under three separate result areas: (i) for work commissioned directly and without competition from Road Management; (ii) for work commissioned on the basis of competitive bidding from Road Management; and (iii) external work. External auditors have been engaged to review value of assets and liabilities taken over from previous operations.

1.33 The Government has further stipulated that the profit at the end of the year should be at least 15 per cent on equity. The Production Unit showed a loss on operations for the year 1995 of SEK 65 million (US$ 10 million) out of a total turnover of about SEK 7 bn (US$ 1.7 bn). The annual result was SEK 24 million, or 19 per cent on equity, including a net financial gain of SEK 89 million.
1.34 The **VUC Unit (Training School)** is responsible for human resources development of SNRA on assignment basis with other units of the SNRA and external clients as agreed.

1.35 The **Unit for Traffic Data (TD)**. TD provides services related to traffic and transport information. This includes development of methods, management of systems, information gathering and analysis of collected data. It further involves development of statistical models for estimating of results, technical model for data collection as well as traffic and transport models. TD carries out assignments on contract basis with other units, and may carry out work for external clients.

1.36 **REGIONS.** The SNRA has seven (7) regional offices directly under the Director General. Each of the regional offices is within its geographical boundaries responsibility for:

- road traffic safety
- environmental impact of road transport
- strategic transport planning for the region
- public transport activities
- road management for national roads.

1.37 Each regional office is given a high degree of autonomy and is responsible for its budget and expenditure within the frames and guidelines prepared by the Government. The **Regional Director of Roads** is placed directly under the Director General of the SNRA, and is responsible towards him for:

- achieved results within the frames allocated
- decisions on detailed organizational questions
- contacts with other public offices and actors

1.38 **Personnel.** The focus on competition within production as well as other areas has led to increased efficiency and a continued reduction of number of staff engaged in production. The total number of personnel employed by SNRA was for 1995 about 7 023, of which 4 719 were engaged in the Production Unit. The total personnel cost was for the same year SEK 1 929 billion, or about SEK 275 000 per employee (US$ 42 000). The number of blue-collar personnel has been reduced since the change of the organization, and is now about 3 750. The central administration, HO, has about 650 staff. Number of chiefs is presently 412.

1.39 **Maintenance Contracting.** Up to 1991 all routine maintenance was carried out as force account operations by the SNRA. Since then more and more also of routine maintenance has been contracted out. For example the SNRA/Stockholm Region started to
contract out routine maintenance in 1993. Routine maintenance for the road network in an area that included about 400 km of roads was put out for tender. The bid was for three years of operation, but with an option for the Employer to extend for another three years and a right for the contractor to terminate the contract after the first three years. The type of contract used is based on a standard description of the basic maintenance functions to be covered ("The Basic Packet") and additional provisional work items that can be procured as need arises, some times on a unit price basis. The private contractor that won the first contract for routine maintenance established a maintenance station, a staff of 2 supervisors and 4-5 labourers, which was considerably less than had been engaged with routine maintenance before. Many of the supervisors employed by the private contractors have experience from previous work in the force account operation. The cost of routine maintenance for the first contracts was about SEK 45/m/year. More recent contracts, after some competition, were signed with a price of about SEK 20/km/year. However, the contractor has used his right to terminate the contract after 3 years, indicating that this price was too low to earn money. The selection of the winning bid has been basically on least cost, however, the contractor has to satisfy certain minimum requirements of quality assurance concepts. Since 1994 the SNRA introduced some evaluation criteria, such that quality, plans of operation, competence, traffic safety and environment should be given weight. Up to now the lowest priced bid has also been the winning one. The evaluation criteria are still under discussion, as it is argued for example that the strict quality assurance systems asked for as well as previous reference projects, have discouraged the smaller contractors to enter the market. The impression of SNRA after these four years of experience with contract routine maintenance are in general good. Problems were as expected experienced in the beginning. A considerable number of complaints were received the first winter. Snow removal is a critical activity, as it requires high capacity and mobility to avoid traffic problems. The SNRA/Stockholm Region estimates that the cost of routine road maintenance has been reduced by approximately 15 per cent as compared to previous force account operations. On a national basis the contract prices for routine maintenance have remained relatively stable from 1993. In Region Middle, a decrease of about 25 per cent has been observed. The variation in bid price is presently about 20 per cent on average, a reduction from more than 50 per cent for the first areas contracted. Presently the market is shared between 3-5 private contractors and the Production Unit of the SNRA. In some remote areas, mainly in the north-west, the contractors have shown very little interest in competing for routine maintenance, and work has therefore been awarded to the Production Unit on a negotiated basis.

1.40 Management of Private Roads. The public's involvement in financing of private roads is a particular feature of road management in Sweden. The private roads are considered as an important complement to the public roads. The objective of the government subsidy is among others to:

- Improve conditions for rural people
- Reduce transport cost in areas where these constrain the development of commerce
- Ensure the public access to recreational areas
- Ensure the public investments made in the private road network
- Observe aspects of traffic safety and environment.

1.41 Private road agencies receive subsidies for road maintenance from the government through the SNRA's Regulatory Functions. Of the total private road network of about 283,913 km, 73,913 km received subsidies in 1995. A total of 24,000 private road agencies were involved, or about 3 km per road agency. The administrative cost to SNRA for each private road agency per year was about SEK 1,200 in 1995. The scale of subsidy per km of road depends on amount of traffic, population density along the road, and more and more on environmental aspects. For the year 1995, the total amount of subsidies for maintenance (and some reconstruction to improve traffic safety) was SEK 762 million, or about SEK 10,000 per km on average.

1.42 Financing. Up to now the investments and maintenance cost of road infrastructure in Sweden have been funded from the Government budget. Toll roads have been very limited in Sweden. It is expected that funding of infrastructure will be harmonized within the European Union, where Sweden became a member in 1995. In principle the fuel charges (tax) and vehicle charges (tax) will be harmonized at minimum levels. The tax on diesel in Sweden SEK 2.51 per litre, including a carbon dioxide tax of SEK 0.92 per litre. The tax on unleaded petrol is SEK 3.88 per litre (leaded is SEK 4.39), included a carbon dioxide tax of SEK 0.74 per litre. The Government in the National Road Management Plan 1994-2003, dated June 1995, states the Government's intention of introducing road user charges to fund the activities of SNRA in the future. The pricing of the services of SNRA would take the form of a two part tariff, which would include a subscriber charge for the right to use the public road network and a variable charge as a levy on fuel. It has been indicated that the fuel levy could be set at SEK 0.50 per litre, which would contribute about SEK 4.4 bn per year to the SNRA expenses. Subscription charges have been mentioned between SEK 1,400 and SEK 2,240 per year, which would yield another SEK 5 bn to SEK 8.9 bn per year.
3. NORWAY: The Norwegian Public Road Administration

(Prepared by Ole Sylte)

2.1 Background. The public road network in Norway totals 90 289 km, of which are 26 488 km of national roads, 27 124 km of county roads and 36 677 of municipal roads. Of the national roads, 6 829 km are defined as trunk roads. The Norwegian Public Road Administration, under the Ministry of Transport, is responsible for national and county roads. The regional administration follows the county division, such that the Director of Road (County) is responsible both for national and county roads. In matters related to county roads he reports to the county administration. The total personnel force of the NPRA was in 1995 about 10 735; of which 541 worked in the head office (Road Directorate), and 5 058 in production.

2.2 Demand. The road traffic grew by 2.3 per cent in 1995. The growth during the last decade, since 1986, has been about 27 per cent. The number of vehicles increased by 2.1 per cent in 1995 to a total of 3 091 320, giving a car occupancy of 1.38 persons per car. Road transport is the dominant mode both for personnel transport and goods transport. It accounted for 88 per cent of personnel transport, in terms of personkm, and 46 per cent of domestic goods transport, in terms of tonkm. Year 1994 was the first when goods transported by road exceeded goods transported by ship (45%). The same year about 8 per cent of goods was transported by rail.

2.3 The Restructuring Process in Norway. The Government, through the Ministry of Transport, appointed in 1991 a Committee (It has later been referred to as the Holler Committee, named after the chairman Mr. K. Holler who was then Director General of the Norwegian Telecommunication and a former Minister) to review the management structure of the functions related to the national road agency. The Committee had eight members including the chairman. Six of the members came from public offices; one from Ministry of Transport and one from Ministry of Finance. One member came from the parastatal Institute of Transport Economics. Only one member came from the private sector; an auditor. The committee had a secretariat of about 5 persons, also coming from either the Ministry of Transport or the NPRA. The Committee presented its findings in a report dated July 1, 1993.

2.4 Organization Models. Very briefly the committee presented two different models for restructuring of the NPRA, supported by a majority and a minority fraction in the committee. In addition two possible models were discussed with the production functions organized as a separate entity, outside the NPRA. It could either be as a commercial public entity, or as a separate legal entity, a limited company or a state company (which in reality is not very much different). However, the committee was unanimous in its recommendation that both regulatory functions and production should remain within the NPRA. The committee had however different views on how to organize the production functions within the NPRA. The majority recommended that the road administration should be divided into two divisions directly under the Director General; one for Regulatory/Road Management functions and one for Production. The main arguments put
forward by the majority fraction were that such a model would ensure a more clear division between *procuer* and *producer* of road products, it would ensure credibility in the market and favour competition and efficiency. Two members of the majority fraction also argued that in the long run the heavier parts of the production activities, i.e. new construction and periodic maintenance, should be taken care of by an entity organized as a separate company. The minority, which included the Administrative Director of the NPRA and a representative of the labour organization, recommended that the division between Regulatory/Road Management functions and Production should be made at the regional level; i.e. that two separate sections should be organized under the Director of Road (County). The main arguments by the minority fraction for this model were that it would ensure cross breeding of competence from production within the NPRA, and that it would secure a local production force at county level adapted to the large number of essentially small units of work. It was also used as an argument by the minority, and this was supported by the Ministry of Transport in the White Paper to the Parliament, that it was a strength of the existing organization that it had the responsibility for all phases of works, from planning, design, construction, maintenance and operation. This strength would be best taken care of by the recommended minority model.

2.5 **Board.** The NPRA has no board. It was discussed by the Holler Committee to have a board, but it was concluded that it would not be in accordance with the intentions of a previous white paper on this issue (St.m. 35/1991-92) and a public study entitled :NOU 19991:26; The Public Board Reform Committee. The principal argument was that a board would not be appropriate for public entities responsible for functions that require continuous political direction, or if it is otherwise desired to focus the political responsibility related to the functions. The Holler Committee stated that a major part of the activities of NPRA would fall under this category, and did therefore not recommend a board.

2.6 **Competition.** One of the major differences when compared to the Swedish organization is the more lax attitude to open (and fair) competition with private contractors and consultants for production. Whereas all new construction in Sweden is subject to competition, only about 60 per cent of road activities are carried out by contractors in Norway. In Norway the Production Sections at the county level prepare construction cost estimates, but do not compete with private contractors for the job. (It is argued by the representatives of the NPRA that the regulations of the European Union (EU), which Norway accepts as member of the European Economic Cooperation (EEC), do not allow such competition between a public entity and private contractors. The representatives of the SNRA did not see any problems in this respect. I do not quite understand the difference, unless it is a "useful argument" to avoid unwanted competition, or if it is because the Norwegian conditions do not represent a level playing field). The NPRA may however decide to award the job to the Production Sections without competition anyhow. The degree of competition is even more different for maintenance. In Sweden all periodic, and almost all routine maintenance is subject to competitive bidding. In Norway only 25 % of maintenance allocations are paid to contractors for periodic maintenance, and no routine maintenance is subject to competition.
2.7 In the above paragraphs I have tried to give a factual description of the arguments used for the organization they ended up with. It is difficult to give a more precise answer to the question why Norway did not follow the Swedish model, as it of course depended on the political environment and the political situation at the time. I would however try to give some more personal observations why it happened this way:

(i) Both countries have had social democratic governments for some time. (With a conservative government in Norway at the time I am fairly certain that a more commercialised model would have been preferred, at least something similar to the one recommended by the majority fraction of the Holler Committee). However, there has been a tradition in Sweden for a long time, and this was also pointed out by the Holler Committee, to have a sharper separation of the regulatory functions (departmental) and the management functions (road administration) than has been the case in Norway. In fact it was included in the mandate of the committee to review this issue separately.

(ii) The composition of the Holler Committee, with only one member from the private sector, speaks for itself when it comes to political bias. The question is: Why were not for example private contractors more involved as a pressure group from the private sector? Probably the answer is that the domestic market for contractors in Norway, North Sea and such, has given them more than enough jobs for the resources they have. This is still the case, and they seem to be not too worried that road works are carried out by the public sector production units to the extent it is now.

(iii) In fairness it should also be mentioned that the NPRA has generally been respected by the public at large to provide good service. The general impression has also been that it has been reasonably efficient. Staff of NPRA, both at the central directory as well as in the county offices, in some cases come from private consultants or contractors and vise versa. This is probably a result of relatively equal conditions of service in the public and this part of the private sector. It has also probably something to do with the Norwegian way of life, in the sense that well educated and competent staff prefer to take up living close to where they come from in the country. In remote places NPRA may be one of the few choices for employment.

2.8 How do they ensure that the road spending produces value for money? The straight answer would be that they presently do not. There is no system in place that gives a fair evaluation of productivity, measured really in terms of unit prices of construction or maintenance, for the private construction industry and the Production Sections of NPRA. In the White Paper (St.m.41/ 1993-94; New Management Structure for NPRA) the Ministry stressed that the recommendations made were all subject to satisfactory productivity demonstrated by the NPRA's force account production units. Through the new commercial cost accounting system that is being implemented now, described in paragraph 3, NPRA is desirous that the production cost will be accounted for on what they call process level. This they say will ensure comparison with the private contractors item by item, as the Standard Process Code for new construction and maintenance would be used to specify
each activity. (Personally I am much more doubtful. I do not think it is possible to demonstrate convincingly differences in productivity in this way, as long as differences are within say plus/ minus 20 per cent).

2.9 **Financing.** Public road spending has traditionally been funded from the government budget in Norway. In recent years the public allocations have been complemented by an increasing share of toll road financing. Since 1985 the private sector's contribution to road investments through toll roads has become increasingly more important. Today about 25 per cent of the total annual funding of new road investments, or about NOK 1.8 bn (US$ 281 million), come from toll fees from more than 35 individual projects. This large increase in private sector involvement primarily reflects the introduction of toll road projects in some of Norway's most densely populate areas. Toll companies have traditionally covered their financial requirements through domestic lending, and have presently more than NOK 8 bn (US$ 1.25 bn) in total debts and about NOK 1.4 bn (US$ 218 million) in annual revenue.

3 **Commercial Cost Accounting System for Roads in Norway.**

3.1 **Book Value of the Road Network.** The NPRA prepares an estimate of the financial/asset value of the roads in connection with the review of the National Road and Road Traffic Plan every forth year. A financial balance sheet, presenting the financial condition of the road network, is not prepared for every year. The present value of a road is based on current replacement cost for the same type of road, reduced by the depreciation from the year of construction. The estimate of book value is done in quite some detail. The road construction cost, replacement cost, is first broken down to a number of cost elements. The actual erosion of road capital is then calculated from the annual maintenance allocations received for each element and the estimated funds needed for a sustained maintenance effort. For example the NPRA estimates that of the NOK 3 bn (US$ 0.5 bn) allocated for maintenance of state roads each year, about 45% is related to activities to sustain the road value. The rest, about 55% is spent on operation activities, such as cleaning and snow removal. The present book value of the 26 488 km of national roads (1995) has been estimated at about NOK 240 billion (US$ 37.5 bn).

3.2 **Commercial Cost Accounting System for NPRA (ECOSYS).** The NPRA is in the process of installing a comprehensive cost accounting system as part of its management information system. About 60 per cent of new construction and 25 per cent of maintenance is contracted out to private contractors. The planning of all maintenance programs and the remaining 75 per cent of routine and periodic maintenance are done in-house. In keeping with the Government's stated intention to continuously evaluate the productivity of the NPRA's force account operations, a new cost accounting system is developed and implemented to ensure that work is carried out as planned and at demonstrated cost effectiveness. The commercial cost accounting system, ECOSYS, should also satisfy the Government’s new directives for all public production units, issued by the Ministry of Finance and the Auditor General’s office. (ECOSYS is partly implemented now and is planned to be fully implmented by January 1, 1998).
The main goals of the ECOSYS are:

- To provide unit costs for work activity and cost centres to determine productivity and efficiency on a project by project basis and on an annual basis for each responsibility center.

- Monitor expenditure against budget

- Monitoring of procurement

Cost centers and responsibility centers. Each cost item is coded according to Project and location.

Work Activities. Work activities are coded according to the Standard Code of Processes, including about 60 processes particularly for maintenance.

Personnel. All personnel is coded individually by salary and overhead.

Plant and Equipment. Each item of equipment is coded according to unit costs from a separate Equipment Management system outside the ECOSYS. Unit cost of equipment include capital costs.

Materials and Supply. All materials and supplies is coded separately.

Overheads. These include cost of headquarters personnel, and estimated rent of offices and workshops based on an evaluation of assets.

Data are processed by the operative unit at each county office every second week, based on reports from all personnel, for each individual machine and standard cost reports.

The major outputs from the system are monthly and annual reports covering:

* A commercial account separated for the Production Unit in each county showing income, expenditure and balance.

* Comparison of budgeted unit costs and actual unit costs

* Comparison of unit cost for force account Production Units and unit costs for private contractors.
4. SOUTH AFRICA: The National Road Authority Ltd.

(Prepared by John Aspinall)

The National Roads Authority Ltd. (NRA) was established through legislation in March 1998 as an incorporated company and has developed from the South African Roads Board. Its function, as the national road agency for the republic, is to be responsible for financing, management, control, planning, development, maintenance and rehabilitation of the South African national roads system. The company has a single shareholder, the Minister of Transport, and it has vested in it certain property assets and liabilities from the South African Roads Board.

NRA Ltd operates 7000km of highway and employs 120 people, although this figure is likely to rise to approximately 150 in the near future. NRA has a Board drawn from various sections of the public and private sector including banking and legal expertise. The Minister nominates the members of the Board. It is regulated by the Department of Transport on behalf of the Minister which ensures that NRA operates within the Government’s policy framework and of course as a limited company it is also subject to the Company’s Act. An annual report and business plan are produced. NRA’s income stream is derived from a levy on fuel, government budget allocations and toll income.

The Chief Executive manages a headquarters office and four regional offices with its own Regional Manager. Each office includes the functions of Corporate, Financial and Engineering Services with additional specialists such as an economist, a strategic network planner and public relations within the headquarters office. The agency has a management and financial focus with all service delivery outsourced which includes design, inspection, surveying, supervision and the carrying out of maintenance and construction works.

Maintenance investment decisions are based on a road management system. Data is collected to the centre and regional offices make annual bids. These bids are discussed with HQ to balance investment decisions and to ensure that investments are made on the basis of the best economic rate of return. An important issue for the future will be optimising investments based on the RMS data. Regional Managers will have responsibility for the delivery of their region’s business plan and incentive mechanisms will be put in place to reward good performance.

Maintenance works are procured by term maintenance contracts for discrete lengths of the national routes. The term maintenance contracts are administered by Maintaining Agents (MAs). The fee for these Agent’s is approximately 16% of the contract value. NRA are dissatisfied with their own ability to control the budget due to the independent role of the Engineer in administering these contracts. They also consider that the MAs are expensive and the agency is considering moving to output based performance contracts. Separate contracts are awarded for construction projects.

NRA also has public and private toll roads. Toll road development began with State toll roads (public) with loans funded by NRA backed with state guarantees. All the operations
were procured. On the basis of an income stream NRA have been able to raise capital through the sale of bonds. The loan supportable by revenue has state guarantees and as a consequence, debt service cover ratios, lower than typical commercial ratios, have been used. In some cases interest payments are not necessarily being covered in the early phase and interest has been rolled up into capital with the certainty of repayment over the length of the whole term. Hence financing costs have been cheaper than a typical commercial loan. State guarantees are no longer available to the Agency and they are examining the potential for their own market borrowing.

Concessions have also been awarded for private toll roads. Concessions are competitively bid and the bid parameter could be either the toll level or the length of the concession. One concession being considered will establish an intervention level at a particular level of service when a length of the existing route will have to be upgraded. Both revenue and risk sharing are included in the concession agreements. The difference between a public and private toll road may well be decided on the basis of traffic risk; a concession for a low traffic risk and a public toll road where the traffic risk is high.

A typical toll rate per kilometre is between R0.16 and 0.20 which covers operation, maintenance and construction costs. There is now no longer a requirement to have a free alternative route to a toll road. It is not considered viable to have two parallel high standard routes. Cross subsidy between routes is possible but politically difficult since the movement of the money between areas is transparent to the public.

The key messages from NRA are:

(i) The importance of sufficient institutional capacity for financial and contract management;

(ii) The clear institutional responsibilities and division between the public and private sector;

(ii) The advantages of a flexible approach to methods of procurement;

(iii) A transitional economy where road users have accepted paying tolls;

(iv) An example of sustainable financing at the programme level from a mixture of sources;

(v) This income stream providing the opportunity to improve the viability of a concession by a subsidy or cheaper capital borrowing.

At the present time, the NRA Ltd represents the leading edge of institutional development in the Road Sector and it has valuable lessons for sustainable management and financing of a national strategic highway network and for viable toll road development.
5. COLOMBIA: The Instituto National de Vias


The public sector in Colombia has been undergoing fundamental reforms since the early 1990's with the aim of cutting bureaucracy and streamlining government. The old Ministry of Public Works was reorganized and renamed, giving an independent organization to each of the transport sectors. In 1994 the newly formed Institute Nacional de Vias took over responsibility for managing the national road network.

Soon after, the process began of liquidating the 26 regional depots of the old ministry (many employing as many as 800 workers) that had been responsible for all aspects of road maintenance, some road construction and dealing with emergencies. Plant and equipment was auctioned off, sometimes to workers who had been made redundant, with the aim of creating a new type of private contractor.

This was only partially successful, as there remains a reliance on traditional contractors. But an internationally tendered project was started in early 1995 to administer technical assistance for the implementation of a Maintenance Management System. The first discovery of the Consultancy was that the old system had been thoroughly dismantled without a new one having been put in its place.

One remnant of the old system, however, were the micro empresas or small firms. These are groups of up to 15 labourers contracted for the routine maintenance of a specific section of road, normally 15-20km. Organized as co-operatives and enjoying the support of the co-operative movement, their impact was limited by poor co-ordination and very little focus.

Owing to the characteristics of the Colombian road network, difficult terrain, high rainfall, high vegetation growth, the high frequency of landslides and relative difficulty of access, the need to have good routine maintenance is paramount. Furthermore, with good supervision the co-operatives would be able to carry out small improvements to drainage or slope stability thus reducing substantially the number of critical points and the vulnerability of the network.

The micro empresas contracts were rewritten to strengthen the concept of them as contractors by introducing maintenance standards, with a system of sanctions for non-achievement and to match contract per kilometre rates to the number of members and to the relative difficulty of the section. In addition, uniforms were introduced and the possibility of loans to acquire equipment was investigated.

When it was decided to retain and strengthen the co-operatives, the figure of the road administrator was created. These people would be contracted road engineers with transport, secretary and inspector, responsible for up to 125km of road. They would plan,
train, manage and supervise the work of the co-operatives, widening the scope of their work as far as possible.

Over a period of three months around 70 administrators were appointed, about half were individual applicants, the rest were from consultancies. They covered over 10,000kni, or about three-quarters of the national road network. Their second most important task was to provide a flow of detailed information to head office in order to plan periodic maintenance activities using a Pavement Management System. Hence, for example, tasks included Benkleman Beam measurements, a geometric survey and surface condition survey.

Data capture software was written and introduced for eventual automatic transmission to the national road data base. Training sessions were organized and regular meetings gave administrators the chance to report their activities and plan the first maintenance programmes and budgets. The road administrators also became key elements in the new regional structure which consisted only of a regional director, one or two engineers and support staff.

In common with many other countries in Latin America, Colombia has experienced the rapid deterioration of its road network due to poor institutional management, poor prioritization and insufficient funds. In the absence of timely intervention, wholesale rehabilitation has been common. Increasingly, large projects are handled as concessions introducing private sector finance into the roads sector. Experimental projects for private sector integral maintenance contracts have also been introduced on a pilot basis.

Eventually a proper study could compare the cost effectiveness of these approaches with road maintenance consisting of co-operatives and road administrators. This low cost, labour intensive approach to routine maintenance is rapidly being copied by local authorities in Colombia and may be a useful model that can be applied in other countries.
6. GHANA: The Ghana Highway Authority

Ghana set up the Ghana Highway Authority (GHA) as a semi-autonomous highway authority in 1974. It was originally set up to manage all roads in the country and was also responsible for many of the regulatory functions previously handled by the Ministry of Works. The authority had a board (all but one member were civil servants), a clear line management structure, and had flexibility over its staffing and hiring practices.

In practice, GHA was not able to manage the entire road network effectively and, in 1981, a separate Department of Feeder Roads (DFR) was established to manage the 22,000 km feeder road network. Likewise, in 1988 a separate Department of Urban Roads (DUR) was set up to manage the 2,800 km of urban roads in Accra (partly), Tema, Secondi/Takoradi, and Kumasi.

GHA functioned fairly effectively in its role of managing the country’s trunk road network until the military government suspended the board in 1981. By then, the government had also established the Ministry of Roads & Highways (MRH) which was responsible for the regulatory issues related to roads. DFR and DUR were departments within MRH and, after the board was suspended, GHA also effectively became a department within MRH. Thereafter, GHA slowly started to go down hill and, by the early 1990s, was operating like most other government roads departments. Some innovations remained, including the rolling three-year corporate plan and the annual performance contract between GHA and MRH based on the corporate plan. The contract spells out the government’s goals for the GHA, strategies for achieving them, and procedures for implementation, monitoring, and control.

In 1995, as part of the Bank’s road sector rehabilitation credit, MRH recognized that GHA would become more effective if the board was reinstated and the composition was changed to make it more commercial and responsive to the needs of road users. So it decided to: (i) revise the GHA decree to provide for a more representative board and to make the organization more commercial; (ii) restructure the road fund under a separate board and use it to strengthen market discipline; and (iii) prepare a new Roads & Highways Act which would clearly spell out the role of MRH, the status of DFR and DUR, the working of the road fund, and the revised status of GHA.
7. NEW ZEALAND: Transit New Zealand

Establishment

The government of New Zealand decided in 1986 to separate the commercial activities of the Ministry of Works & Development from its policy/regulatory functions, by end September 1987 and to corporatize all the commercial activities by 1 April 1988. On 1 April 1988 the National Roads Board and management of all state highways (10,300 km sealed, plus 160 km unsealed). In September 1989, Transit New Zealand was created “to promote policies and allocate resources so as to achieve a safe and efficient land transport system that maximizes national economic and social benefits.” Its principal responsibilities included:

- Preparing an annual National Land Transport Program based on Regional Land Transport Plans.
- Advising government on the suitability of the Land Transport System in New Zealand.
- Managing the strategic highway system.
- Recommending to government, levels of income and expenditure for the Land Transport Fund.
- Funding and auditing approved projects.
- Managing payments to local authorities for local roads and passenger transport.

The above structure resulted in some conflict of interest. TNZ was responsible for the strategic road network and also managed the road fund which also financed local authority roads. So, as from 1 July 1996, the road fund will be managed by a separate entity and TNZ will concentrate on providing the other services listed above.

Management and Staffing

TNZ is managed by a General Manager who reports to a separate board known as the Transit New Zealand Authority. The Authority has an independent chairman (a former local authority engineer), a deputy chairman (past president of the Institution of Professional Engineers), and six other members with experience in town planning, industry, local government, road transport (past president of the Automobile Association), farming and accounting. All are appointed jointly by the Ministers of Transport and Finance and all receive annual director’s fees and expenses. TNZ acts as secretariat to the board.

Below the GM, there are four divisions headed by line managers. They include the State Highway Policy Division, Corporate Services Division, Financial Services Division, and State Highway Management Division (the latter with regional offices throughout the
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country. A small Corporate Office, dealing with land transport policy, reports directly to the General manager. TNZ employs 166 staff who manage an annual budget of about US$500 million. TNZ basically acts as a manager of others, with all design, supervision and physical works being carried out by outside agencies.

Contract with Government

The Minister of Transport remains as the client and a contract known as the Statement of Intent (SOI) is negotiated and agreed annually between the two parties. The SOI has to cover the following issues:

- The basis on which individual projects will be evaluated.
- How the budget of outputs is to be determined for the following year’s National Land transport program.
- The approved competitive pricing procedures (contracting out).
- The management and financial systems under which the Authority will undertake its functions.
- The safety and construction standards to be applied to projects, where appropriate.
- The objectives of the Authority for the next 5 years.
- An evaluation of the land transport needs and issues likely to arise over the next 5 years.
- Performance measures.
- Such other matters as the Minister may require from time to time.

Reporting against targets in the SOI is done at 6, 9 and 12 months into the FY, with monthly reviews of the NLTP each month, to ensure that the full budget allocation is spent.

Audit & Reports

The Authority is audited by the Auditor General’s Office. An annual report is also issued each year which includes a summary of the Authority’s activities during the year, its annual financial statements, SOI, an analysis of performance against the SOI targets, and the report of the Audit Office.

Accounts

The Authority produces commercial accounts, but does not show the value of road assets in its balance sheet. Consultations are currently going on with a view to including
the depreciated replacement costs of state highways in TNZ’s balance sheet (NZ$7,430 million), requiring them to earn a 6.4 percent rate of return on this capital, and including in their expenses a better figure for depreciation of assets.

**Impact on Operations**

The corporatization of the road agency in New Zealand has had a number of noticeable effects. Main among these were:

- TNZ now has to develop briefs spelling out what is required of the consultant and contractor.
- It has to decide whether to engage a consultant to manage contractors, or to do this itself.
- The organization has undergone a major cultural change, with staff now accepting that decisions cannot be based on technical criteria alone, but must be justified with reference to financial, social and environmental impacts as well.
- Accountability is more clearly defined.
- Working with consultants/contractors has focused attention on the legal requirements of the new organization.
- Management has begun to think in terms of liability for actions, management of cash flow, debtors, marketing, etc.
- The impact on the bottom line since 1990 has been that indicative costs have fallen noticeably:
  - professional services on state highways, 20 to 30 percent lower (i.e., design, supervision, etc.)
  - physical maintenance of state highways, 17 percent lower.