

# Open Seminar on Recent Trends and Performance Measurement of Road Administration in the U.K., U.S. and Japan

at  
Tokyo, Japan  
November 16, 2005



# Schedule

|         |  |   |
|---------|--|---|
| 2:30 pm | <b>Seminar Opening</b> <ul style="list-style-type: none"> <li><i>Opening Remarks</i> <span style="float: right;"><i>Mr. Hiroshi Mitani, Chairman, JRA</i></span></li> </ul>  |   |
| 2:40 pm | <b>Lectures on “Recent Trends of Road Administration and Approaches to Performance Measurement”</b> <ul style="list-style-type: none"> <li><i>Recent trends of road investments and approaches of performance measurement to promote the efficiency on road investments will be presented by speakers of three countries.</i></li> </ul> |   |
|         | 1  | <i>Japan (20 min.)<br/>Recent Trends on Road Administration and Performance Measurement in Japan</i><br><br><i>Mr. Atsushi Fukasasa,<br/>Director, MLIT</i>         |
|         | 2  | <i>U.K. (20 min.)<br/>Road Administration and Performance Management in the United Kingdom</i><br><br><i>Mr. Richard Eastman,<br/>Divisional Director, HA</i>       |
|         | 3  | <i>U.S. (20 min.)<br/>Recent Trends in United States Road Administration and Highway Performance Measurers</i><br><br><i>Dr. Anthony Kane, Director,<br/>AASHTO</i> |
| 3:50 pm | <b>Questions and answers and discussion with participants in the auditorium: (40 min.)</b>   |   |
| 4:30 pm | <b>Seminar Closing</b>   |   |

# Recent Trends on Road Administration and Performance Measurement in Japan

16 November 2005

Fukasawa Atsushi

Director

Economic Research, Traffic Survey and Census Office  
Planning Division, Road Bureau  
Ministry of Land, Infrastructure and Transport

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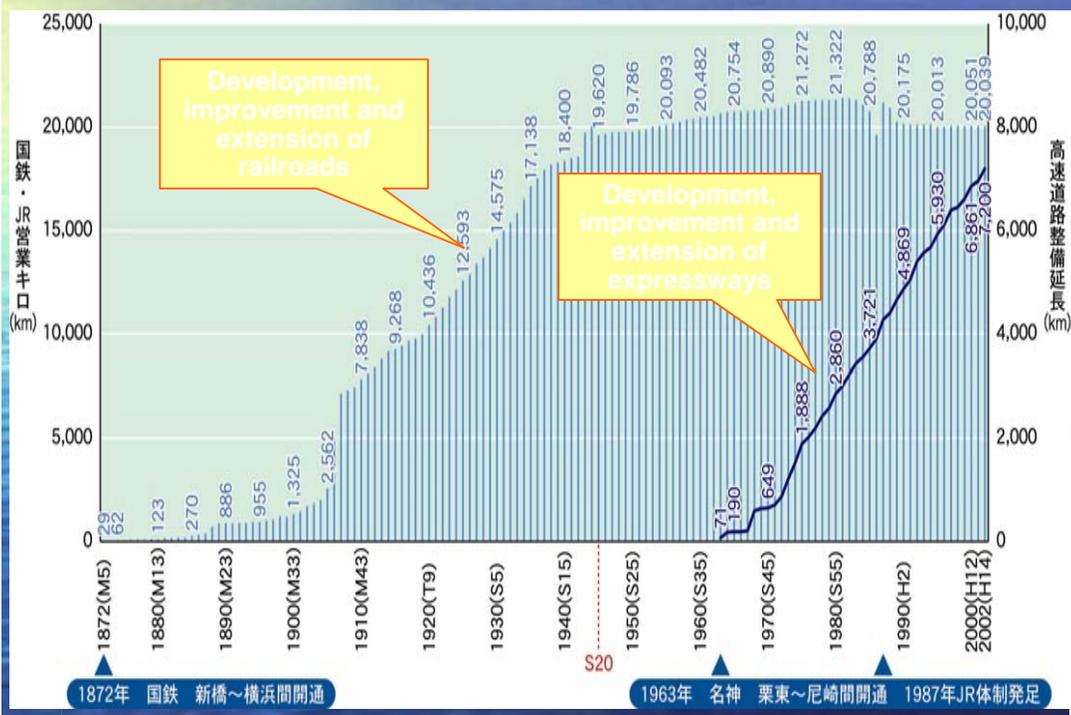
1. Current state of Road Investments
2. Examples of Major Undertakings
3. Efforts to Performance Measurement



# Current state of Road Investment

# ◆ Japan's Full-fledged Attempts to Renovate Roads Began in the Wake of WWII.

- Full-fledged efforts for road planning and development did not begin until 1955.
- In the wake of the war, even national highways remained unpaved.



Unpaved road 1953 (Itabashi-ku, Tokyo)



Traffic congestion and chaos (Intersection at Sankocho, Shinjuku) (Source: October 1960 issue of *Shin-Toshi* (New Metropolis))

## Changes in development and extension of railroads and expressways

Sources:  
 For railroads: *Kokuyu-Tetsudo / Tetsudo Tokei Ruinenhyo* (Annual Statistics on Nationally Owned Railroads and Railroads) (up to 1986)  
*Sujidemiru Tetsudo 2004* (Railroads 2004 in Numbers) (1987 and onward)  
 Expressways: *A Handbook of Expressways 2002*

## ◆ Creation of Systems Addressing Road Development and Improvement

- Construction of expressways was needed to cope with rapid motorization.
- Efficient land transport was a bottleneck impeding the economic recovery.

Three core systems that accelerated road development and improvement:

1) The special funding source for road works

2) The toll road system

3) 5-year Road Improvement Programs

• From 1952 to 1953, the Road Law, the Law on Special Measures for Road Development and Improvement, and the Law on Temporary Measures Concerning Funding Sources, etc. for Road Development and Improvement Expenditures (which later became known as the Road Construction Emergency Measures Law) were enacted.

⇒ In FY1954, the first five-year program for road development and improvement began, and the designation of tax revenues reserved for road development and improvement was made.

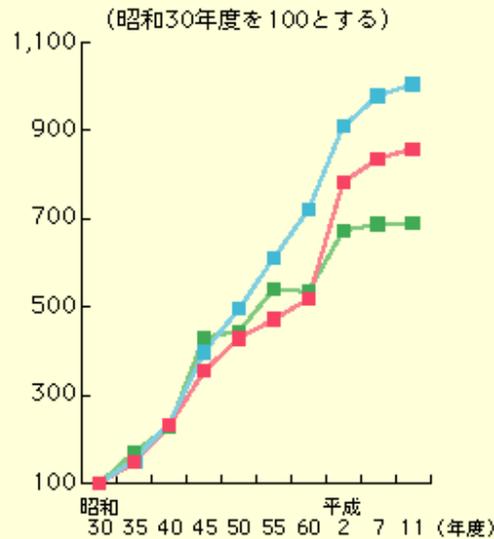
• Japan Highway Public Corporation was formed in 1956, followed by the enactment of the National Development Longitudinal Expressway Construction Law and the National Expressway Law in 1957.

• Upon deliberation by the Council for the National Development Longitudinal Expressway Construction Law, the Japan Highway Public Corporation was mandated to carry out and launch projects.

⇒ In 1963, Meishin Expressway (71 kilometers between Amagasaki and Ritto) opened.

# ◆ Rapid Economic Growth and Motorization

- Parallel to rapid economic growth, waves of motorization spread through the nation quickly.
- To lessen the 'quantitative insufficiency' has been a priority task for road administration.

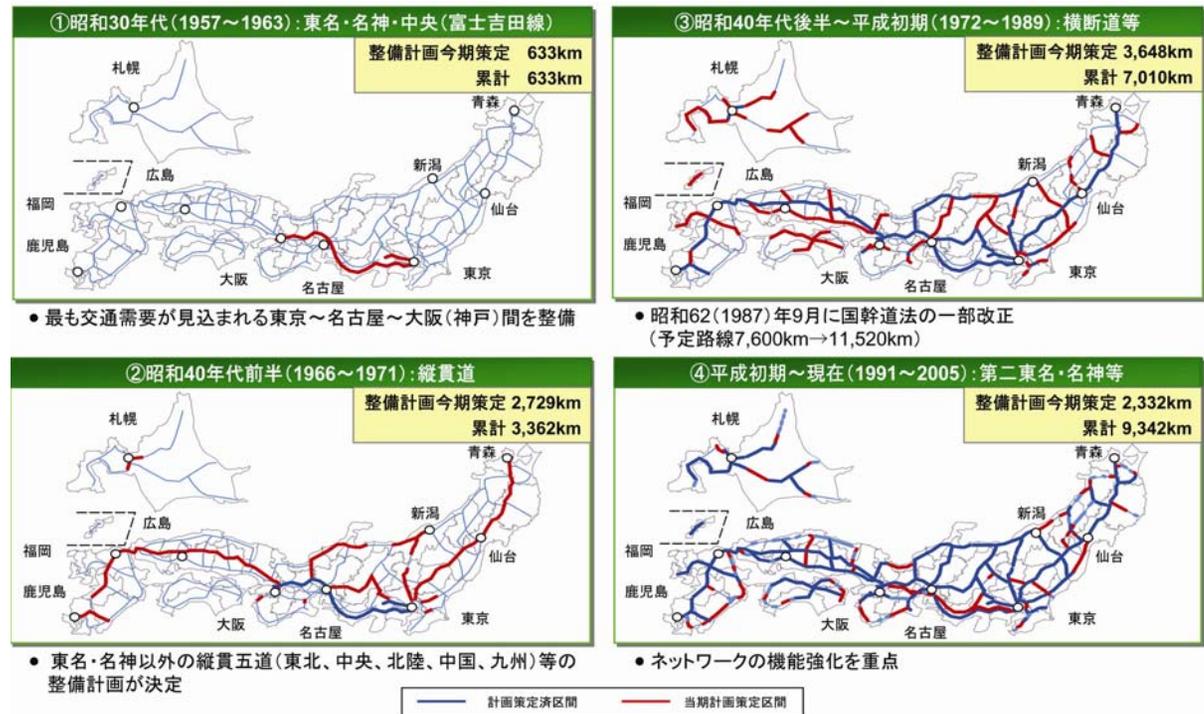


- 実質GDP
- 国内旅客輸送 (人キロベース)
- 国内貨物輸送 (トンキロベース)

注1：国土交通省資料、内閣府「国民経済計算年報」により作成。  
注2：実質GDPは平成2年基準。

## Change in GDP and volume of domestic transport

Source: *White Paper on Land, Infrastructure and Transport in Japan for FY2001*

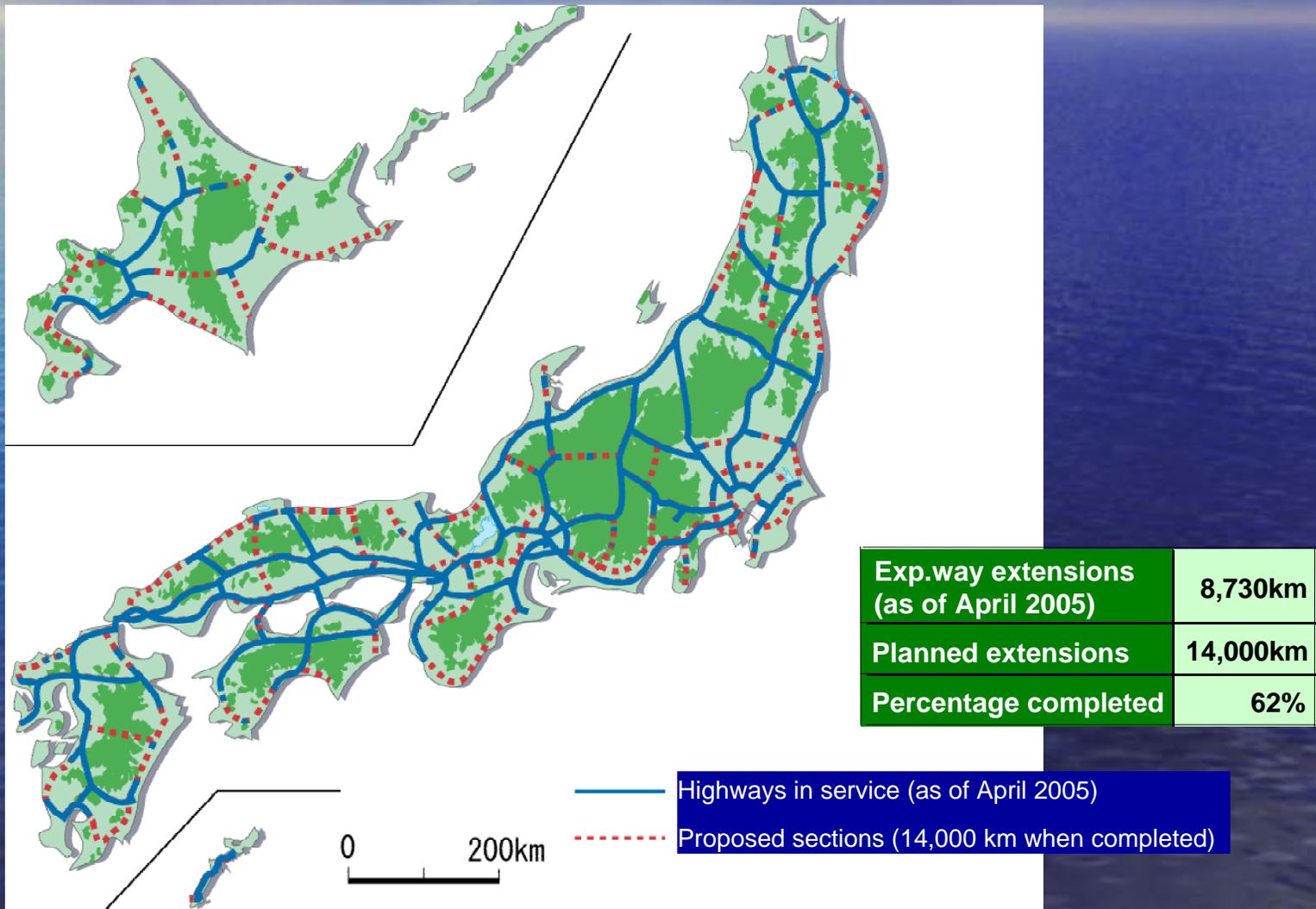


## Evolution of Expressway network

Source: Prepared based on documents of the Promotion Committee for Privatization of the Four Highway-related Public Corporations

## ◆ Current State of Expressway Network

- About 60% of the planned Expressway have been completed.
- Future issues include utilization of the portion already in service and more efficient development of truly needed highways.



# ◆ The Priority Plan for Social Infrastructure Development (2003-2007)

- The Plan succeeds to 5-year Road Improvement Program since 2003.
- Corresponding to the plan, it has been endorsed by the cabinet, that investment volume for road should not exceed \38 trillion yen (national budget) for planning period.
- In FY2005, \9.3 trillion is annually invested for roads in Japan.

Work volume relating to road development for the five-year period beginning FY2003 (00 Millions of Yen)

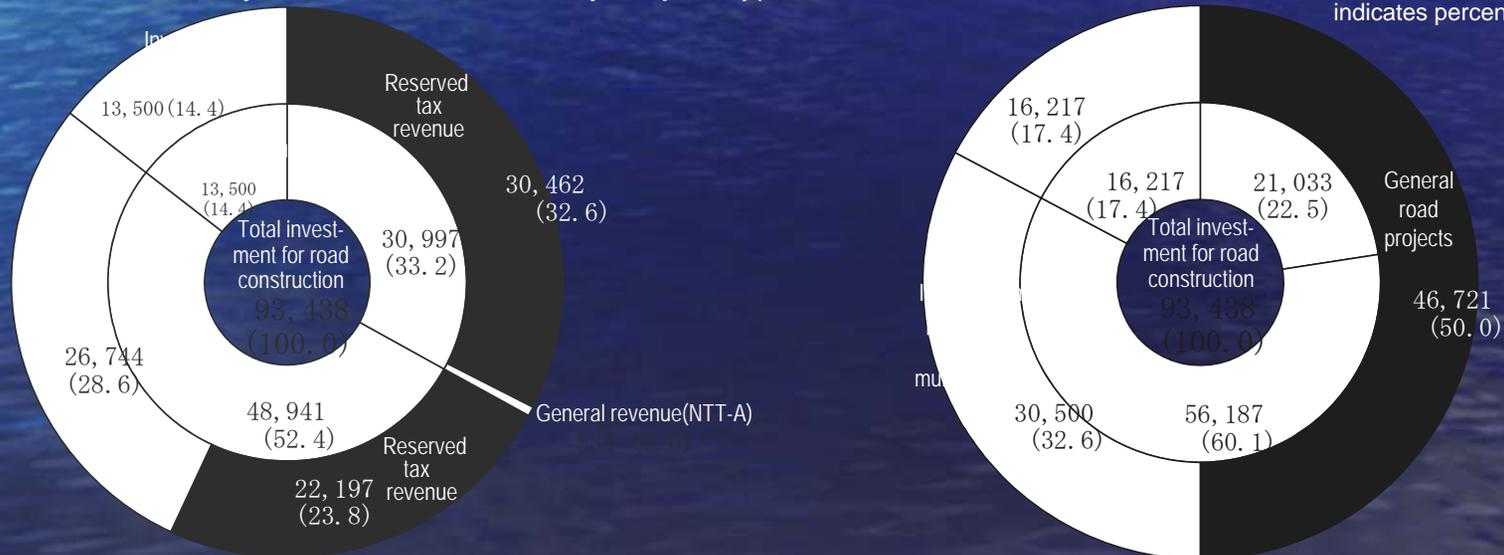
|  | Work volume for the 5-year period beginning FY2003 | Twelfth 5-Year Plan |            |                               | Multiples against Planned | Multiples against Actual |
|--|--|---------------------|------------|-------------------------------|---------------------------|--------------------------|
|  |  | Planned (A)         | Actual (B) | Percentage achieved (B) / (A) |                           |                          |
| Investment for road (public-sector only) | 380,000  | 462,000             | 451,602    | 97.7%                         | 0.82                      | 0.84                     |

Note: An additional \19.0 trillion yen is expected for projects independently carried out by local municipalities.

FY2005 Road Investment by Source of Funds and by Project Type

(00 Millions of Yen)

Number in parentheses indicates percentage (%)



# ◆ Sources Earmarked for Roads

|   | Tax   | Earmarked percentage  | Tax rate   | Tax revenue (FY2005)                     |                |
|---|---|---|--|--|----------------|
| National  | Gasoline tax<br>Created in 1949; designated as reserved tax revenue in 1954 | 100%  | (Provisional tax rate)<br>¥48.6 per liter  | ¥2,913.8 billion<br>(¥2,962.9 billion)   |                |
|   |   |   | (Basic tax rate)<br>¥24.3 per liter  |  |                |
|   | Motor Vehicle Tonnage Tax<br>Created in 1971                                | About 80% (77.5%) of the tax revenue allocated to the nation (2/3 of total) | [Example: Passenger vehicles for home use]<br>(Provisional tax rate)<br>¥6,300 per 0.5 metric ton per year | ¥585.1 billion                           |                |
|   |   |   | (Basic tax rate)<br>¥2,500 per 0.5 metric ton per year   |  |                |
| Liquefied Petroleum Gas Tax<br>Created in 1966          | 1/2 of tax revenue  | (Basic tax rate)<br>¥17.5 per kilogram                                      | ¥15.0 billion<br>(¥15.3 billion)   |  |                |
| Total   |   |   |  | ¥3,513.9 billion<br>(¥3,563.3 billion)   |                |
| Local   | Gas Oil Delivery Tax<br>Created in 1956                                     | 100%  | (Provisional tax rate)<br>¥32.1 per liter  | ¥1,055.6 billion                         |                |
|   |   |   | (Basic tax rate)<br>¥15.0 per liter  |  |                |
|   | Automobile Acquisition Tax<br>Created in 1968                               | 100%  | (Provisional tax rate)<br>5% of purchase price for private motor vehicles                                  | ¥465.5 billion                           |                |
|   |   |   | (Basic tax rate)<br>3% of purchase price   |  |                |
|   | Local transfer tax  | Local Road Transfer Tax<br>Created in 1955                                  | 100% of Local Road Tax revenue   | (Provisional tax rate)<br>¥5.2 per liter | ¥307.2 billion |
|   |   |   |  | (Basic tax rate)<br>¥4.4 per liter       |                |
|   |   | Motor Vehicle Tonnage Transfer Tax<br>Created in 1971                       | 1/3 of Motor Vehicle Tonnage Tax revenue   | Please see Motor Vehicle Tonnage Tax     | ¥376.7 billion |
| Liquefied Petroleum Gas Transfer Tax<br>Created in 1966 | 1/2 of Liquefied Petroleum Gas Tax  | Please see Liquefied Petroleum Gas Tax                                      | ¥14.7 billion  |  |                |
| Total   |   |   |  | ¥2,219.7 billion                         |                |
| Grand Total   |   |   |  | ¥5,733.6 billion<br>(¥5,783.0 billion)   |                |



# Examples of Major Undertakings

# ◆ Anti-seismic Reinforcement of Bridges

- Anti-seismic reinforcement of bridges (elevated highways) is under progress based on the three-year program (FY2005~FY2007) for the anti-seismic reinforcement of bridges for emergency transportation routes and others

- Concrete filling method for steel piers
- Steel plate jacket method for RC piers



Damage caused by the Great Hanshin Earthquake

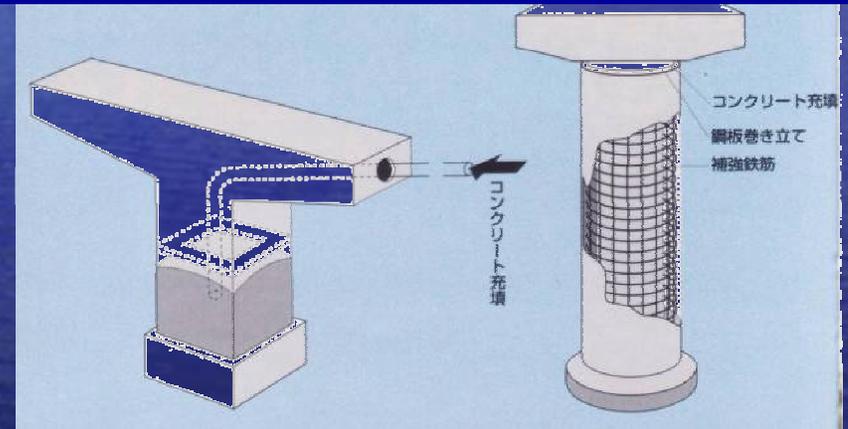


Diagram: An example of construction technology for anti-seismic reinforcement (for piers)

Reinforced pier unaffected by a major earthquake  
(Technology of circumferentially reinforced piers by steel plate)



Mid Niigata Prefecture Earthquake (seismic intensity of 7) / Toka-machi, Nagaoka-shi

# ◆ Acceleration of Measures for Grade Crossings

- Quick remedial measures should be administered at 1,300 locations in five years.
- Drastic measures will be administered at 1,400 locations, and the speed of implementation will be doubled.



Before measures were taken

After measures were taken

Crossings require urgent improvement  
(2,100 locations)

Grade Crossing (36,000 locations)

Crossings without  
Sidewalks  
(700)

Widening of  
Sidewalks

Prompt Measures  
(1,300)

Completed in 5 years

'Never-open  
Rail Crossing'  
(Crossings with  
significantly frequent  
interception)  
(600)

Crossings with big traffic volume  
(500)

Crossings with many pedestrians  
(300)

Grade  
Separation

Drastic Measures  
(1,400)

Grade Crossings Elimination  
at a doubled pace

# ◆ Preservation of global environment

- The target for CO<sub>2</sub> emission reduction through the road policies shall be established to ensure the Kyoto Protocol target will be met.
- Urgent measures will be administered by 2012 at about 1,800 points noted for severe congestion.

## (1) Reexamination of the relationships between people and vehicles

Creation of opportunities, through efforts to establish communication with local residents, to allow each individual to reflect on his or her car utilization pattern, which may lead to reduced use.

Improved convenience offered by public transportation to encourage a shift from driving to public transportation.

Promotion of eco-driving such as anti-idling and improved fuel mileage.

Cargo transportation designed to minimize environmental burden to be encouraged by working together with shippers and distributors.

## (2) Smoothly running traffic free of congestion

Measures to relieve congestion to be introduced by primarily focusing on the ring roads in urban areas that benefit most from CO<sub>2</sub> emission control.

Promotion of measures designed to reduce congestion at points of severe congestion, where CO<sub>2</sub> emissions are concentrated, and to remove railroad crossings, which serve as bottlenecks.

Development of bypass routes, etc. and parallel measures to narrow the width of old routes and surrounding community roads to be carried out all in a single package.

Redirecting motor traffic from ordinary roads to expressways where CO<sub>2</sub> emissions are low.

Reduction in road construction work, as this is a major cause of traffic congestion.

## (3) CO<sub>2</sub> Reduction through better utilization of road space and ingenious approaches

Greening of road areas to maximize CO<sub>2</sub> absorption.

Active introduction of water-retentive pavement to achieve higher uchimizu (water spraying for cooling down) effects.

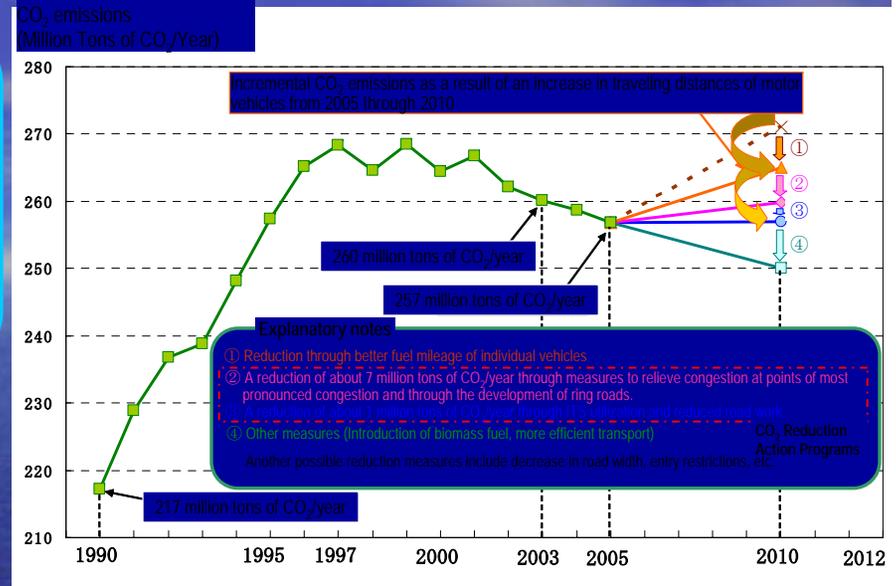
Active utilization of new energies such as solar energy and windmill power generation for road lighting.

## (4) More efficient operation of motor vehicle traffic

Feasibility of road pricing and entry restrictions to certain roads to be studied to relieve congestion in urban areas

Enhanced delivery of information on road traffic conditions through utilization of ITS (Intelligent Transportation Systems).

Elimination of street parking violations, a major cause of congestion.



\* CO<sub>2</sub> emissions for 2004 through 2005 were estimates based on the emission trends established from 1999 through 2003.

\*1 The target called for in the Kyoto Protocol

# ◆ Development of Ring Roads in Urban Areas

- Progress is being made in the construction of ring roads in Tokyo and other areas.
- Ring roads are expected to greatly contribute to congestion relief and bring other benefits equals to ¥4 trillion /yr. for the metropolitan area.

## ◆ Ring roads in the Tokyo metropolitan area

### ● Current (as of April 2004)



State of construction: About **90%** of radial roads and **20%** of ring roads have been completed.

State of congestion: Major points of congestion inside the Metropolitan Inter-City Expressway amount to about **600** locations.

#### Losses caused by congestion:

Nationwide: About ¥12 trillion annually  
 Tokyo Metropolitan Area: About ¥2.8 trillion annually  
 Tokyo Prefecture: About ¥1.2 trillion annually

### ● Short-term objectives (To be achieved in 10 years)



Construction to be completed: **90%** of radial roads and **40%** of ring roads.

#### Effects:

- Congestion of the major points within the Metropolitan Inter-City Expressway will be **relieved by 60%**
- Reduced traveling time and reduced fuel consumption will bring about **¥2 trillion** in savings annually.
- Compensation for land requisition paid to landowners who in turn use it for real estate purchases and construction will bring about **¥2 trillion** in effects.

### ● Completed network



Construction to be completed: **100%** of radial roads and **100%** of ring roads.

#### Effects:

- Congestion of the major points within the Metropolitan Inter-City Expressway will be **mostly eliminated**
- Reduced traveling time and reduced fuel consumption will bring about **¥4 trillion** in savings annually.
- Compensation for land requisition paid to landowners who in turn use it for real estate purchases and construction will bring about **¥6 trillion** in effects.

# ◆ 'Tsukaeru Highway'- Towards More Accessible and Functional Network

## Building a network

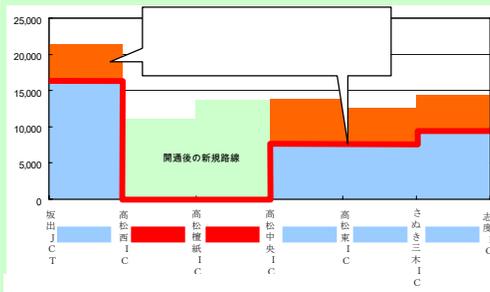
- Building of a network that allows access to expressways in about 1 hour from anywhere in Japan



## Utilizing the network

- All roads ranging from community roads to expressways should be equipped to offer their intended functions.
  - Society in harmony with the environment
  - Resurrection of community roads
  - Prosperous society allowing easy and dependable long-distance mobility

### Elimination of missing links



Change in traffic volume after all segments of the Takamatsu Expressway went into service

### Development of additional interchanges



Pilot program for a smart interchange (ETC-only interchange) connected to service and parking areas

### Diverse and flexible pricing measures



Pilot program for toll pricing measures conducted in the segment of Niigata City and its vicinities of the Nihonkai-Tohoku (Nittodo) Expressway.

- Reduction in losses caused by congestion  
¥896 million/12 hours (daytime on weekdays)
- CO<sub>2</sub> reduction  
1.4%/12 hours (daytime on weekdays)

# ◆ A New Society that Results from “Tsukaeru Highway”

Society in harmony with the environment



- CO<sub>2</sub> reduction through less congestion
- Environmental improvement for roadside areas

Prosperous society allowing easy and dependable long-distance mobility



Growth of high-standard arterial road networks and changes in required traveling time.

Resurrection of community roads



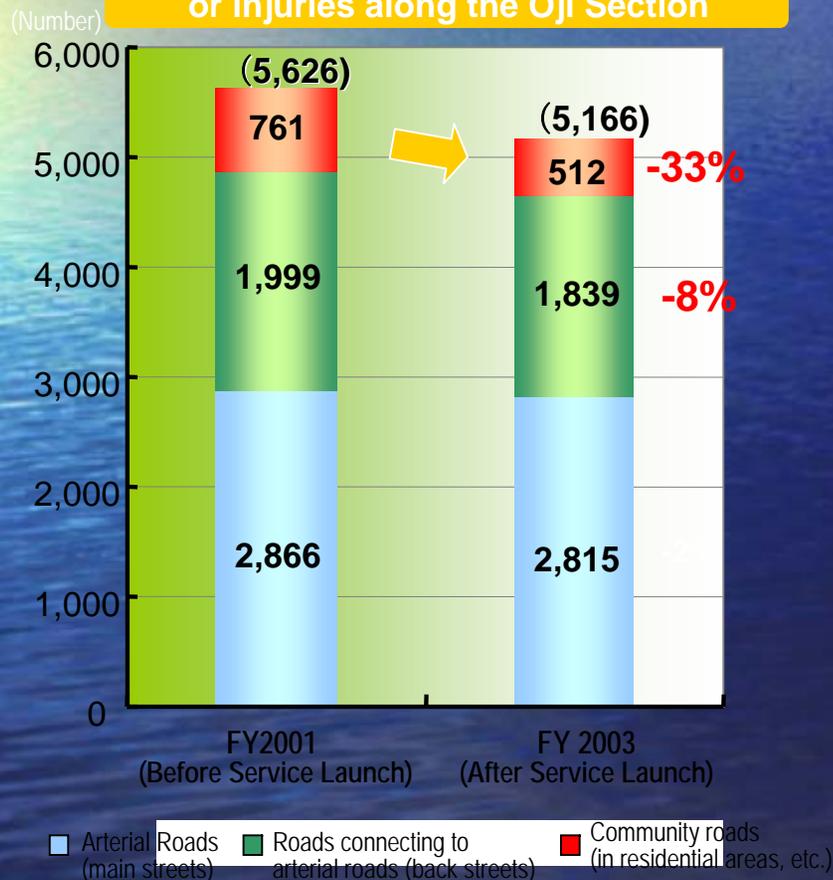
- Development of community roads that pedestrians can walk on with peace of mind

Deve

## ◆ Chain Effects of Ring Roads - A significant decline in traffic accidents on community roads

- The community roads along the Chuo Ring Road Oji Section (in service since Dec. 2002) saw a 30% decrease in the number of accidents compared to the period before the opening of the Line.
- The development of ring roads prompts a traffic shift from congested arterial roads to the ring road and, subsequently, a shift from community roads to arterial roads, which are no longer as crowded as before (chain effects).

Number of accidents involving deaths or injuries along the Oji Section



Chuo Ring Road Oji Section Length: 7.1 km  
Went into service on December 25, 2002



Sources: Statistics of Metropolitan Police Department

# ◆ Enhanced Service through the Evolution of ITS:

## - Toward the Creation of Roads with Significant Added Values

- With the spread of VICS\* and ETC\*\*, ITS has become a practical tool to cope with traffic problems.
- A single onboard device allows access to diverse services in 2007.
- Enhanced services through assistance for safe driving

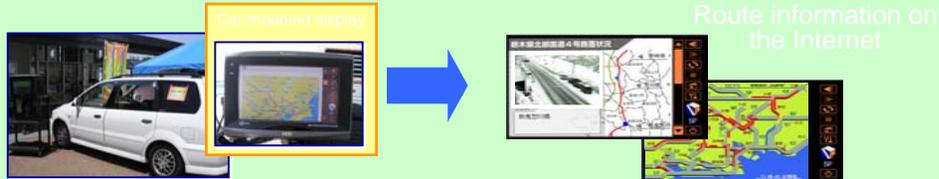
\* Vehicle Information and Communication System  
 \*\* Electronic Toll Collection System

### Diverse array of services

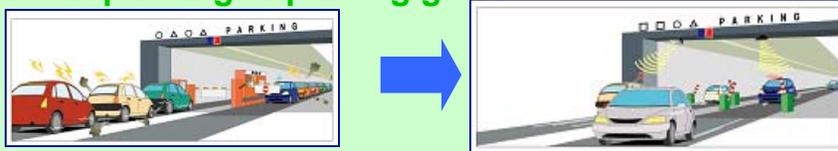
#### New VICS services



Information delivery and Internet connectivity at service areas and parking areas, which serve as “roadside stations”



#### Smooth passing of parking gates



Service launch is scheduled for 2007

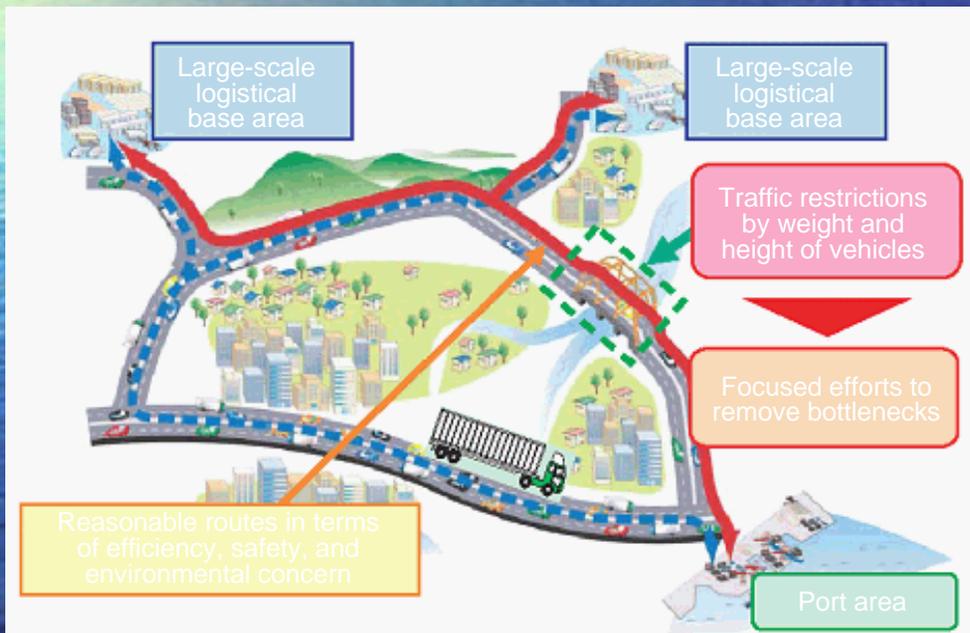
### Assistance for safe driving



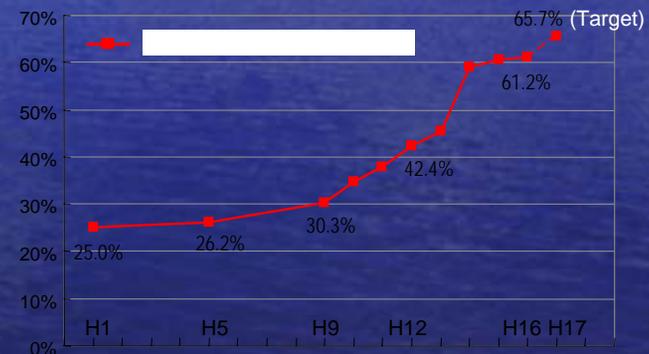
Pilot program is in progress in the Sangubashi Curve Segment (downtown-bound) of the Metropolitan Expressway No. 4 Shinjuku Line

# ◆ Efficient and Eco-friendly Logistic Measures

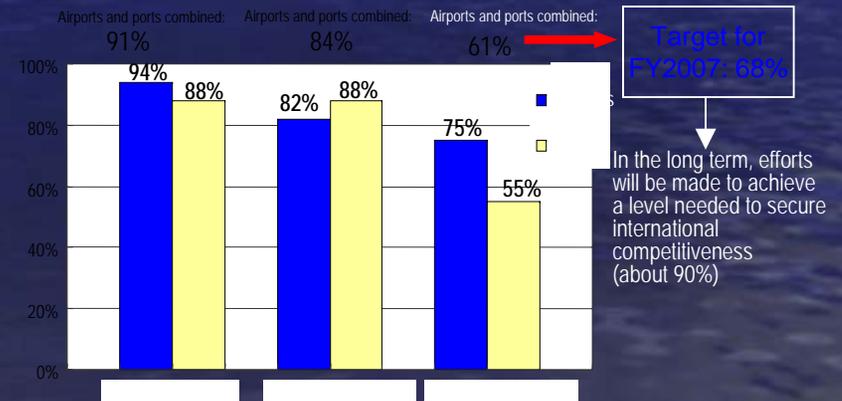
- More roads will be accessible to international-standard container trucks. (Removal of bottlenecks impeding the development of “Super Hub Ports” in about 5 years)
- Priority is placed on the construction and improvement of routes leading to major airports and ports.



1) Change in accessibility to major airports and ports from expressways as measured by the percentage of airports and ports accessible from expressways in 10 minutes or less



2) State of accessibility to major airports and ports from expressways (an international comparison)



# ◆ Road Map with Ease-of-Drive Markings: Indication of Service Levels

- Roads on the map are shown by the level of service and not by the type of roads.
- It is designed to offer more convenience assistance for travelers, leading to road evaluations and improvements.

## Service level indicators

| 自動車専用道路<br>(走りやすさのイメージ)   | 走りやすさ<br>ランク | 走りやすさの分類  |
|---|--------------|---|
|   | M            | 「道路の走りやすさ」について、道路の幅、カーブの大きさ・多さ、歩道と車道の分離状況などにより、以下の6段階に分類しました。 |
| 自動車専用道路で、スムーズな走行が可能   |              |   |
|   | S            |   |
| 郊外部・山地部の道路<br>(走りやすさのイメージ)  | どこでも走りやすい    |   |
| ① 2車線以上の道路で、5km以上にわたって、カーブ・勾配が緩やか。<br>② 路肩も広く、歩行者がほとんどいないが、歩道と車道が明瞭に分離されている。<br>③ 主要な道路との平面交差が平均して1箇所/km以下。 |              | 市街地部などの道路<br>(走りやすさのイメージ)                                     |
|   | A            |   |
| ① 2車線以上の道路で、カーブ・勾配が緩やか。<br>② 歩道もしくは広い路肩がある。   |              |   |
| ① 2車線以上の道路で、緩やかでないカーブがある。<br>② 路肩が狭いところがある。   | B            |   |
|   | G            |   |
| ① 2車線以上の道路で、緩やかでないカーブがある。<br>② 路肩が狭いところがある。   |              |   |
|   | D            |   |
| ① 2車線以上の道路で、急カーブ・急勾配が多い。<br>② 路肩が狭いところがある。  |              |   |
|   |              |   |
| ① 1車線の道路で急カーブが連続。<br>② 路肩が狭い。   | 走りにくい        |   |
|   |              |   |
| ① 1車線の道路。<br>② 歩道がない。   |              |   |

## Ordinary road map



## Road map with ease-of-drive markings



# ◆ Privatization of the 4 Road-related Public Corporations

- Ensure Repaying Interest-bearing Debts of \40Trillion (\$350Billion) in 45 years.
- Expedite Construction of Necessary Roads with minimum cost while Respecting Companies' Own Decisions
- Provide Various and Flexible toll charge-setting and Services applying Know-how of Private Companies

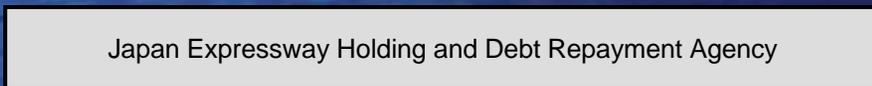
## [Outline of privatization]



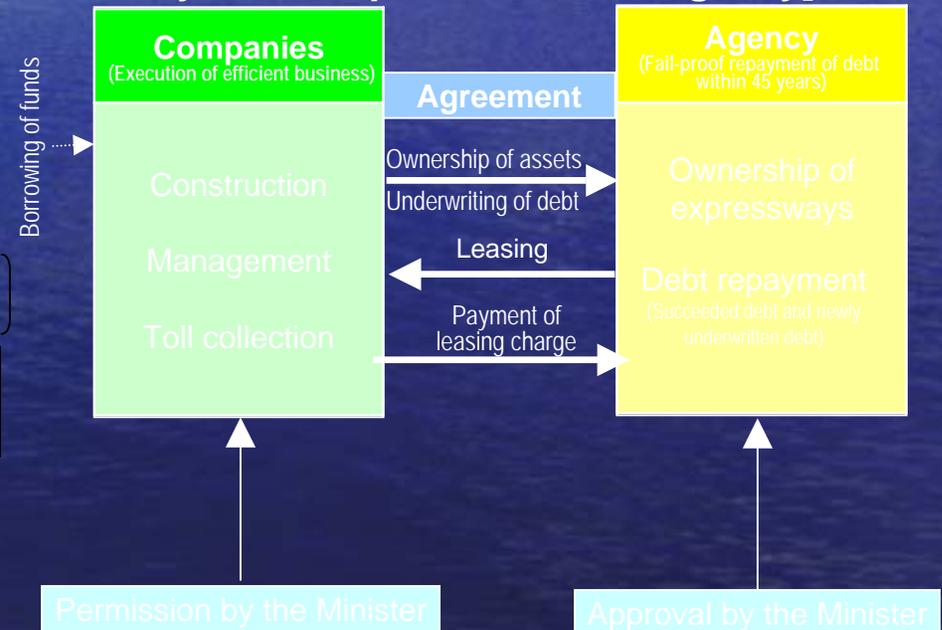
[Companies] Construction, management, and toll collection for expressways



[Agency] Holding of expressways and repayment of debt



## [Action scheme for the execution of expressway business by the Companies and the Agency]



- Transfer to the Companies and to the Agency was completed in October 2005.
- Consultation between the Companies and the government will be carried out before April 2006 to set forth future plans to develop the network.



# Efforts to Performance Measurement

# ◆ The Undertakings of Road Administration Management

FY2003  
(Start)

- The numerical target is set up every year, such as reducing national traffic congestion time 3% in one year, and the "result-oriented" administration management which evaluates the achievement level subsequently started to be promoted.

FY2004  
(Performance)

- The first "Achievement Report" was drawn up and the achievement level of the target declared one year ago was checked. The evaluation and the knowledge which were acquired by the "Achievement Report" were reflected to the following policies and following projects.

FY2005  
(Fixing)

- Released the "Achievement Report" and the "Performance Plans" in June.
- Hereafter, a road administration management will be familiarized to local areas, thus it will be certainly practiced.

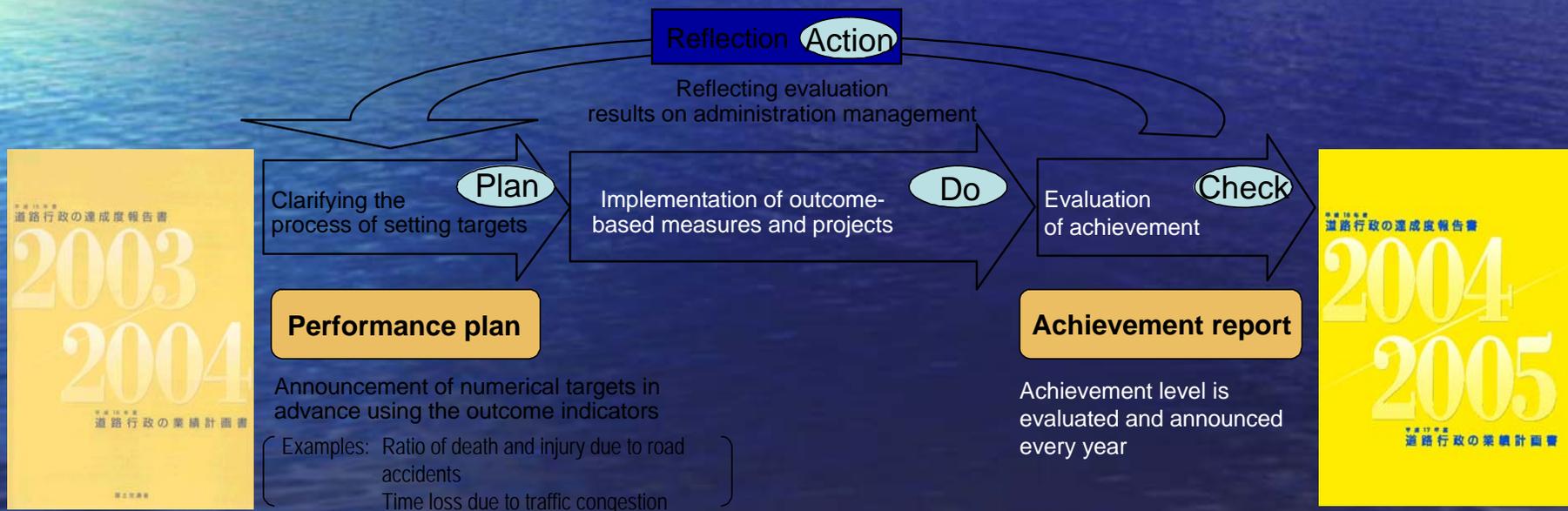


Figure: Flow of Road Administration Management

# ◆ Linking Outcome and Budget

## Reforming the items in a budget of countermeasures for traffic accidents to link intended outcome and budget directly



② Proposed budget for FY2005

| Budgets based on performance   | Amount of 2005 budget (project costs)        |
|--|--|
| Major Indicators   | Target for FY2005                            |
| Cost for traffic facilitation measures   | 722.7 billion yen                            |
| Time loss due to traffic congestion  | Approx. 3,620 million people-hr/yr           |
| Cost for projects to promote cooperation with communities  | 1,922.8 billion yen                          |
| Ratio of high standard road usage (Targeted traffic that will be newly switched over to expressways)                               | 14%  |
| Ratio of roads with access to hub airports and ports   | 66%  |
| Ratio of main cities in neighboring regions that are connected to each other by an upgraded national road                          | 75%  |
| Percentage of people who are able to have a safe and pleasant drive into the city (the center of daily living) in under 30 minutes | 66%  |
| Cost for maintenance and repair  | 238.2 billion yen                            |
| Percentage of cities that have rescue routes covering a wide area in the event of disaster   | 72%  |
| Ratio of bridges receiving preventive maintenance  | 91%  |
| Cost for projects to improve roadside environment  | 188.1 billion yen                            |
| Rate of NO <sub>2</sub> environmental goal achievement   | 81%  |
| Rate of SPM environmental goal achievement   | (Maintained 2004 standards) 100%             |
| Achievement rate of required limits on night time noise  | 68%  |
| Cost for priority measures dealing with traffic accidents  | 151.9 billion yen                            |
| Road traffic accident casualties rate  | 112 accidents/100 million vehicle-kilometers |
| Cost for projects to improve traffic safety facilities   | 322.2 billion yen                            |
| Percentage of barrier-free main roads in the vicinity of passenger facilities with an average daily user volume of more than 5,000 | 35%  |
| Cost for projects to prepare for common utility duct   | 198.3 billion yen                            |
| Percentage of trunk roads in urban areas without telephone poles   | 11%  |

# ◆ An Example of Measures to Relieve Congestion

Indicator:  
Time loss due to traffic congestion

Based on the time loss due to traffic congestion as indicator, medium-term numerical targets are set up and are followed up on each fiscal year.

- Time loss due to traffic congestion (FY2002):
  - 3.81 billion person-hours (nationwide)

FY2007: 10% reduction will be achieved

Actual results for FY2003: 3.76 billion person-hours  
Target for FY2004: 3.69 billion person-hours

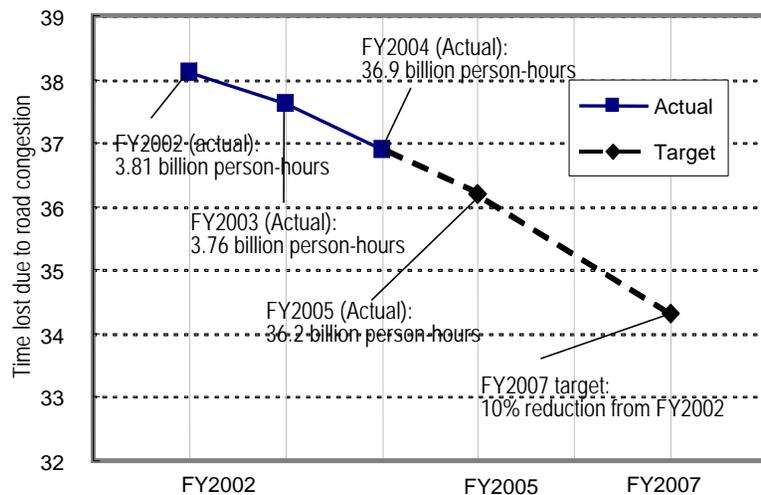
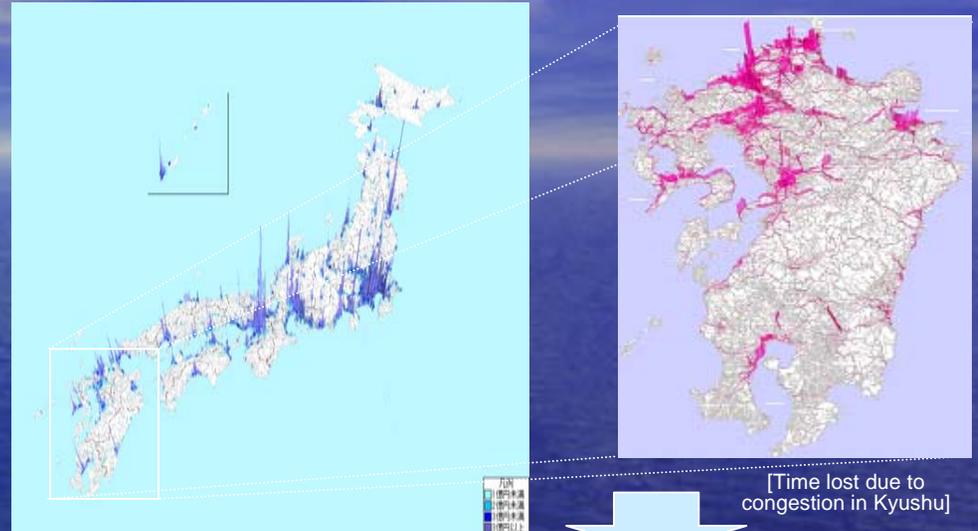


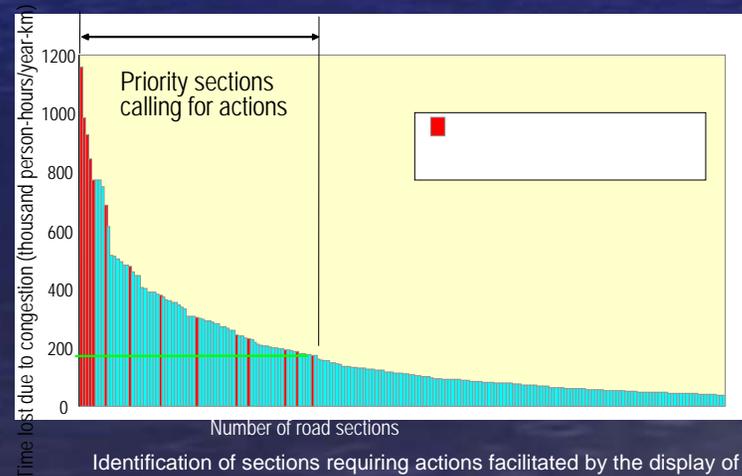
Figure: Time Loss due to Road Congestion

## ■ Understanding the degree of congestion



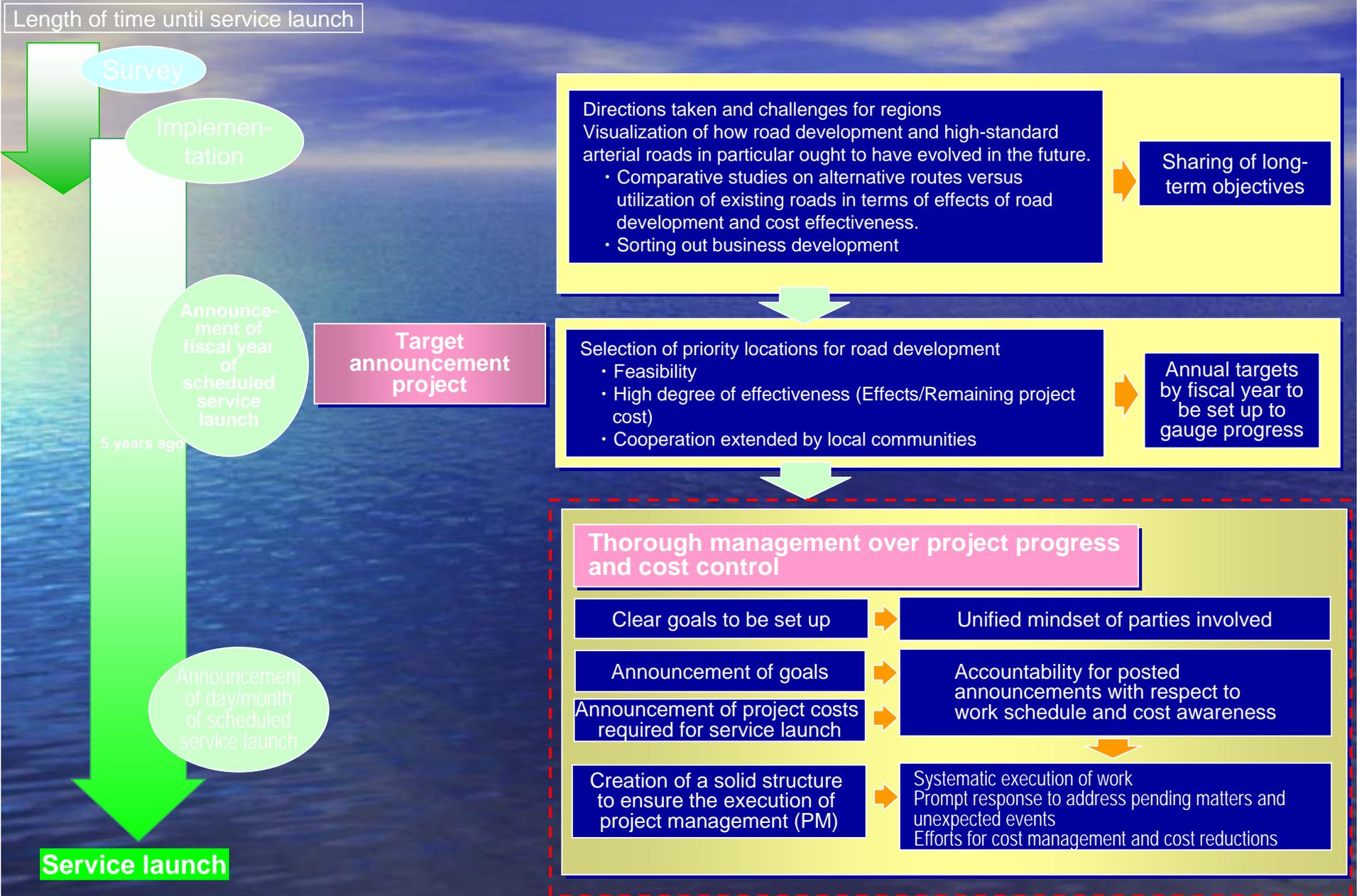
[Time lost due to congestion in Kyushu]

■ Display of road sections in the order of congestion intensity (time loss due to congestion) from severest to mildest for clear identification of priority sections  
Actions combining hard and soft measures are administered to sections noted for severe congestion



Identification of sections requiring actions facilitated by the display of priority areas

# ◆ Project Management



## ◆ 道に関する言葉

(ルートンファーツアイ)

### ・ 開道発財

域住

(イートンバイトン)

道を造って、沿道地域の経済を活性化することにより、地民の生活が豊かになる。

### ・ 一通百通

される。

1本の道路を連結することで、ネットワークの連結性がよくなり、たくさんの箇所との連絡が格段に向上

(シャオダオシャオファン ダダオダファン)

### ・ 小道小豊大道大豊

路ネットワーク

(スダオスファン)

小さな道路より、高速道路など主幹線道路を作った方が経済発展により役立つ。

### ・ 速道速豊

速い道路（高速道路）を作ることにより、速く豊かになる。

(シアンダオツォファン)

### ・ 想豊作道

ある。

豊かになりたければまず道路ネットワークの完成が先決で

◆ End of Presentation

Thank you.  
Enjoy your stay in Japan.



Ministry of Land, Infrastructure and Transport

# ROAD ADMINISTRATION AND PERFORMANCE MANAGEMENT IN THE UNITED KINGDOM

November 16, 2005

Richard Eastman

リチャード・イーストマン

Divisional Director, Network Strategy  
(Central)

Highways Agency

# England's Strategic Road Network

- 7,300 kms in length – only about 2.5% of the total road length in England
- Carries 33% of all traffic and 60% of truck movements
- Traffic volumes vary from 10,000 vehicles/day on a rural single carriageway to 200,000 vehicles a day on some motorways (eg M25)

## England's strategic road network

2,900 kms motorway

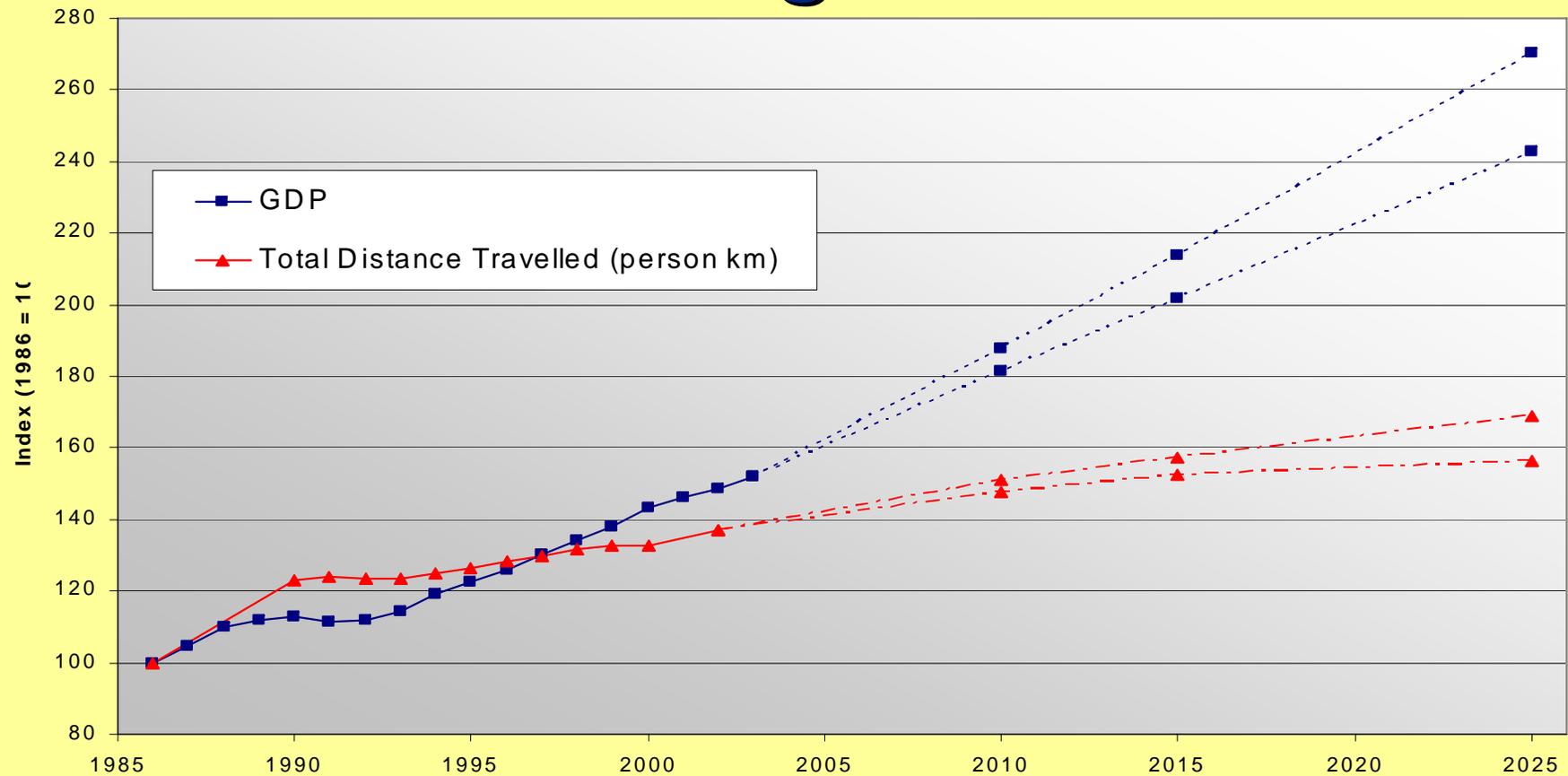
4,400 kms all-purpose road (mostly dual carriageway)



# Transport policy background

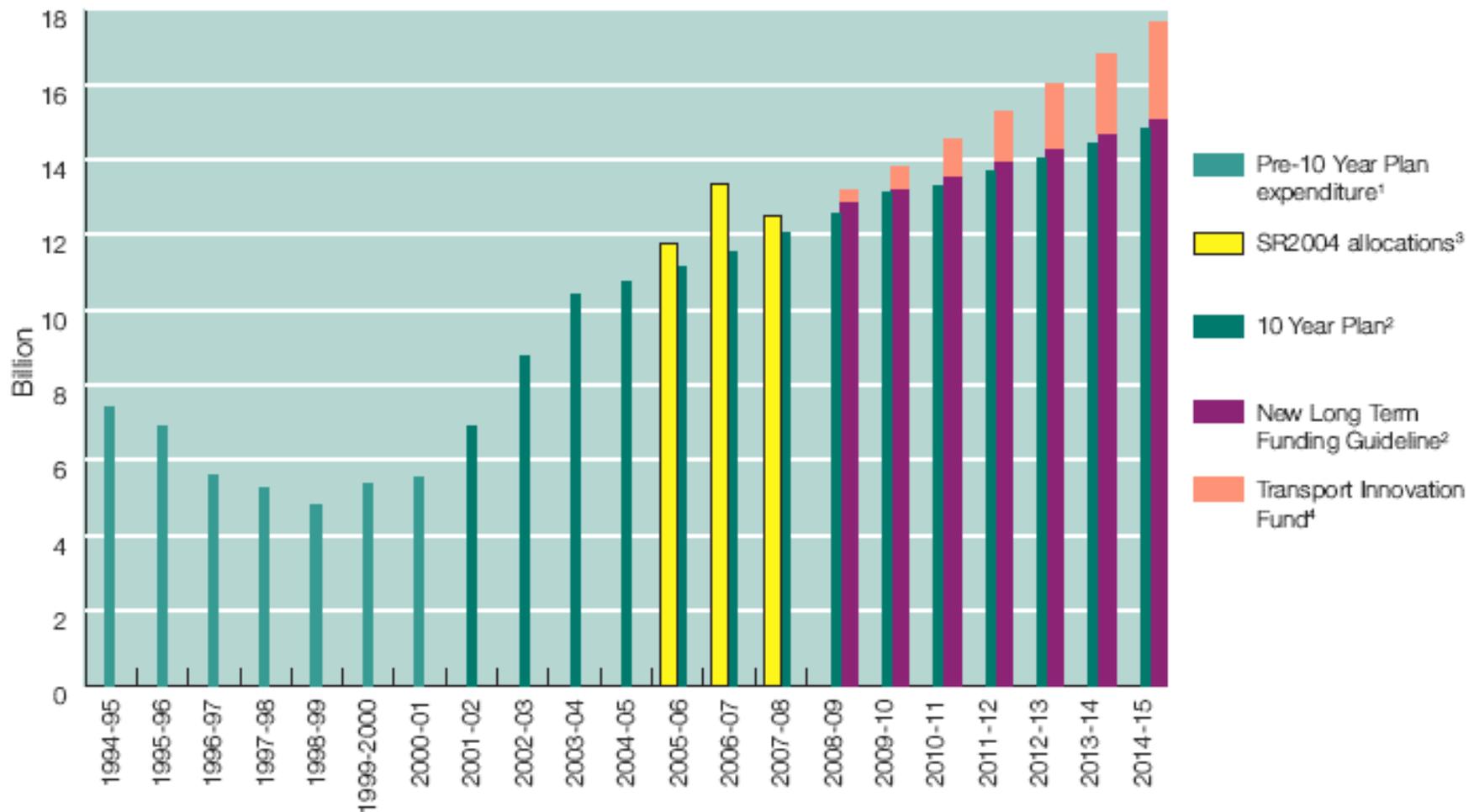
- **Economic growth**
  - International competitiveness
  - Effective labour markets, and the right skill
- **Housing**
  - New homes
  - Accessibility
- **Environment**
  - Climate change
  - Local environment, including safety, noise, air quality

# National economic growth and traffic growth



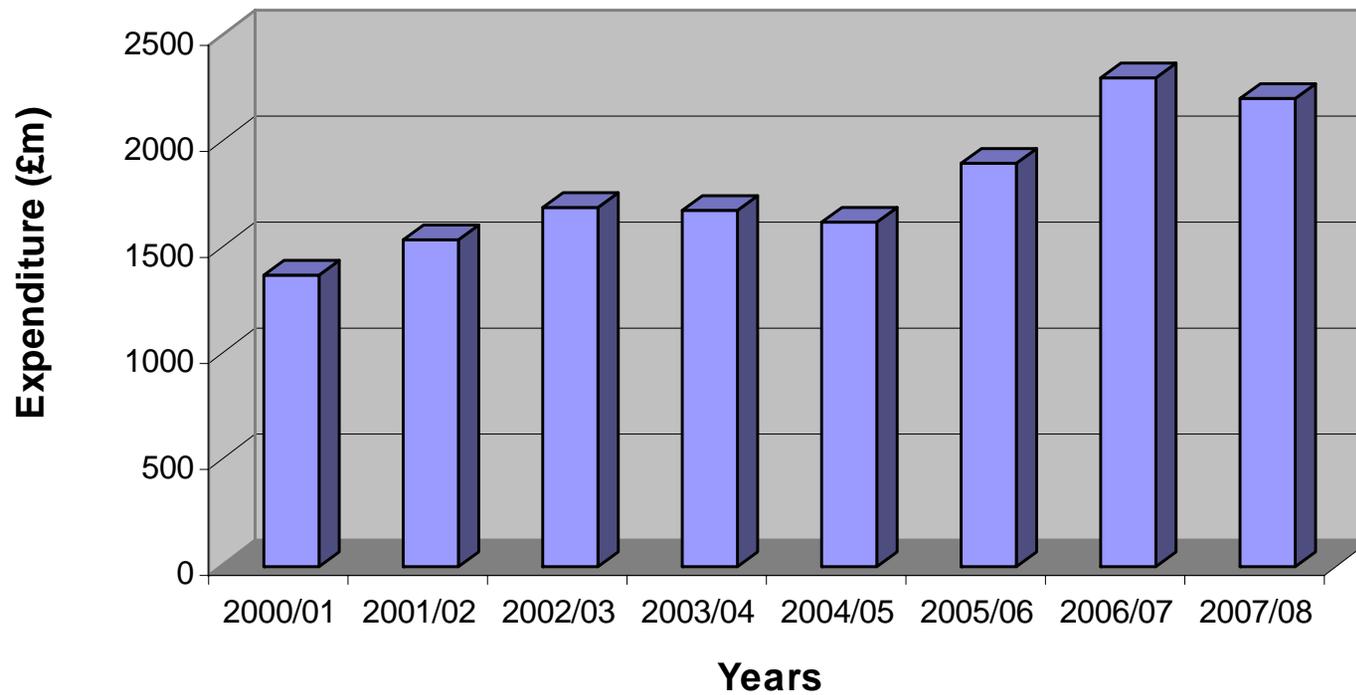
# Money helps

Transport spending, 1994-95 to 2014-15



# Strategic Roads Programme Budget

Highways Agency Programme Expenditure



# Performance Management

- How is the performance of the UK Highways Agency managed against this demanding background?
- What is the role of Public Service Agreement targets in performance management?

# What are Public Service Agreement (PSA) Targets?

- Introduced in 1998 as part of the Chancellor's Comprehensive Spending Review
- Represent what is delivered for public money allocated to a Government Department
- Aim to be few in number but comprehensive and outcome related

# Where do PSA Targets Fit?

## Department for Transport/Ministers

Set policy, allocate resources and agree delivery targets

## Spending Review

Agreed Resources and PSA Targets with HM Treasury

## HA Framework Document

Sets formal responsibilities and relationship with DfT

## Corporate Plan - Customers First

Sets longer term direction and strategic priorities

## Business Plan

Sets out what we deliver over a three year period

## Performance Management Process

Manages performance to achieve Business Plan goals

## Personal Development Plans

Sets out what individuals will deliver

## Annual Report and Accounts

Reports what we have delivered

# Highways Agency's PSA Targets

- **Safety** - Reduce the numbers of people killed and seriously injured
- **Congestion** – Improve journey time reliability for the slowest journeys
- **Environment** - Improve air quality and reduce greenhouse gas emissions

# The new journey time reliability target

- New Public Service Agreement target set in July 2005
- By 2007-08, make journeys **more reliable** on the strategic road network

# The new journey time reliability target

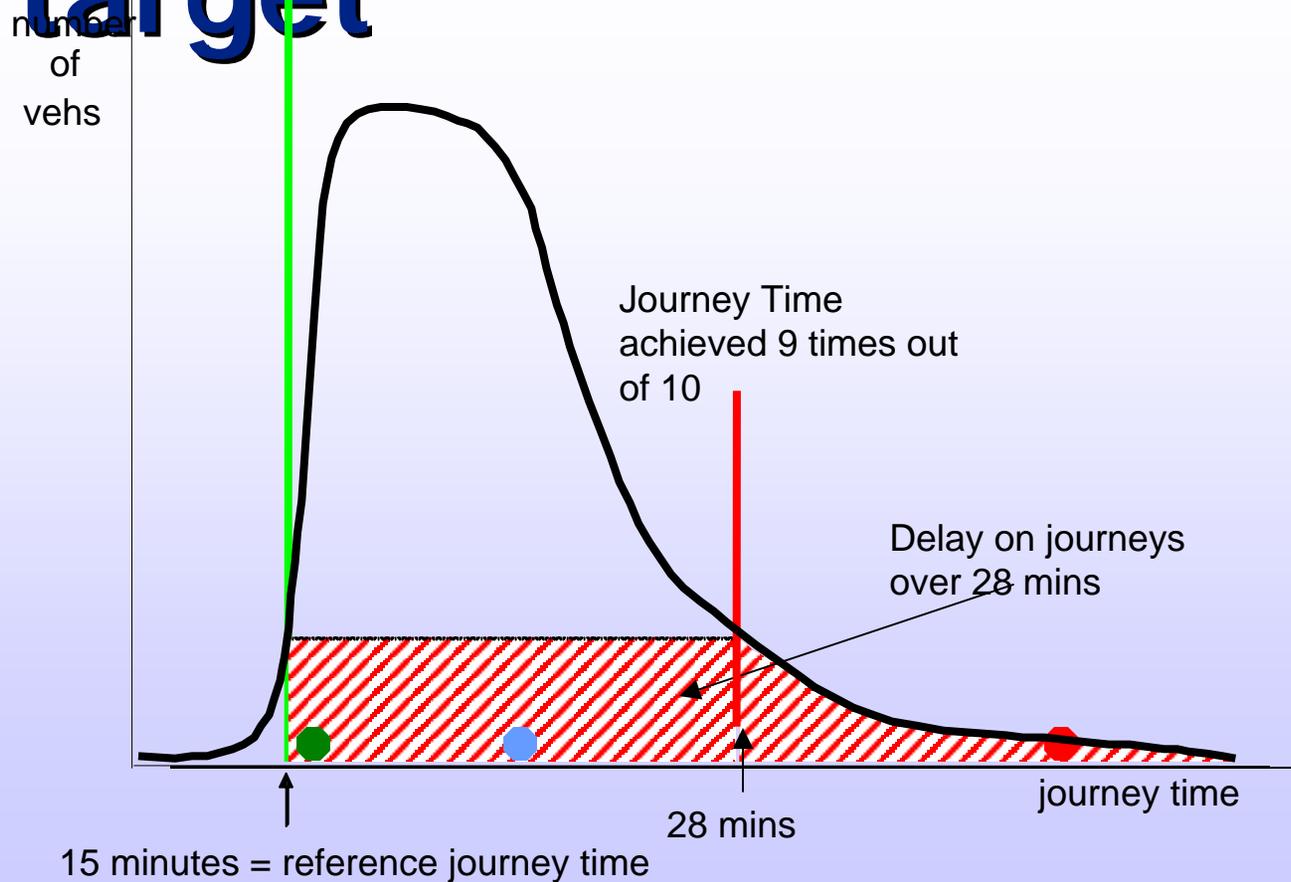
- Measured by:

Improving in aggregate the **slowest 10% of journeys** for each of 98 routes, for each day of the week (Mon – Fri), for each time of day (0600-2000), measured in 15 minute intervals;

Between the baseline period of **August 2004 to July 2005** and the target period of **April 2007 to March 2008**.

# Journey time reliability

## target



# Why this measure?

- Unpredictable journey times are of most concern to business and our customers
- Gives us an incentive to improve how we manage incidents, roadworks and other events affecting the slowest journeys
- Our efforts are focussed where we can most improve the experience of our customers

# Road Safety

Baseline 1994-1998

Target on strategic roads in England:

- 33% by 2010 of killed and serious injuries
- 50% by 2010 of child ksi's

Performance:

- 19% by 2004 of killed and serious injuries
- 34% by 2004 of child ksi's

# Road Safety Measures

- **Road safety partnerships**  
between Highways Agency, local Highway Authorities and the Police Service
- **Engineering** - we improve road features
- **Driver Education** - to reduce speeds
- **Enforcement** - we use technology
- **Vehicle design and standards**

# Conclusions

- Good transport systems essential to maintain international competitiveness
- Modern performance management systems introduce best business practice to the public sector and improve organisational efficiency
- Good performance management in the UK is driven by the Prime Minister



# **Recent Trends in United States Road Administration and Highway Performance Measurers**

**By Dr. Anthony Kane  
Director, Engineering and Technical Services  
American Association of State Highway  
And Transportation Officials**

**At The  
Tri-National Workshop on Performance Measures  
November 16, 2005  
Tokyo, Japan**

# Presentation Outline

- Forces influencing use of Performance Measures
- Categories of Measures used in United States
- Challenges in Performance Measurements
- Trends in U.S. Finance
- Recent U.S. National Funding Legislation

# Forces Influencing Performance Measurement in the United States

- [Redacted] e.g.,  
Government Performance and Results Act (1998); Cabinet Inspector Generals
- [Redacted]  
Quality Systems; Management Mandates
- Peer Pressure, Peer Benchmarking
- Reduced staff of Federal and State DOTs

# Forces Influencing Performance Measurement in the United States (Cont'd)

- Customer/Public Demand for Accountability and Transparency
- Success with ties to Budget/ User Fee Increases (Federal ,State and Local levels)
- Greater use of Asset Management
- Increased Outsourced Performance Based Contracting

# Typical Categories of Measures Used by U.S. State DOTs

- Asset Condition (pavements, bridges, traffic/safety hardware)
- Safety (fatalities, injuries)
- System Operations (congestion, travel time)
- Project Delivery (time, budget)

# Typical Categories of Measures Used by U.S. State DOTs (cont'd)

- Human Resources (turnover, education, morale)
- Customer Satisfaction (quantitative/qualitative)
- Environment (air quality, wetlands, historic properties)

## Additional Measures Used at National Level

- Travel time in freight corridors
- International border crossing efficiency
- Air quality conformity
- Efficiency of environmental clearances
- Program and project delivery efficiency
- Employee and partner satisfaction

# Challenges in Performance Measurement in the United States

- Hard to Measure Areas: travel time, reliability, quality of life, economic growth, freight, security
- Benchmarking and Comparisons across States
- Linking measures to budgets, expenditures
- Setting Target Levels by Benefit/Cost

# Challenges in Performance Measurement (cont'd.)

- Rapid Turnovers of Top State DOT Officials—Continuity of Support
- Dashboards for Top Management
- Communication of Results to Public and Legislatures
- Using Large Amounts of ITS Data – Real Time and Historical
- Data Adequacy and Cost

# Candidate Urban Performance Measures of the National Transportation Operations Coalition (NTOC)

- Customer Satisfaction
- Extent of Congestion
- Incident Duration
- Recurring and non-recurring delay
- Speed
- Throughput
- Trip travel time
- Travel time reliability

# U.S. Highway Capital Expenditure

|         | 1980            |           | 2003            |           |
|---------|-----------------|-----------|-----------------|-----------|
|         | <u>Billions</u> | <u>%</u>  | <u>Billions</u> | <u>%</u>  |
| Federal | \$10            | 50        | \$31            | 44        |
| State   | \$5             | 25        | \$22            | 31        |
| Local   | <u>\$5</u>      | <u>25</u> | <u>\$17</u>     | <u>24</u> |
| Total   | \$20            | 100       | \$70            | 100       |

\* Local= counties, cities, and townships

# U.S. Federal Gasoline Tax Rate Changes

|      | <u>Cents/Gallon</u> | <u>(Yen/Litre)</u> |
|------|---------------------|--------------------|
| 1932 | 1                   | 0.3                |
| 1956 | 3                   | 0.9                |
| 1959 | 4                   | 1.2                |
| 1983 | 9                   | 2.7                |
| 1990 | 14.1                | 4.2                |
| 1993 | 18.4                | 5.5                |

# U.S. State Level Gasoline

## Tax Rate (October 2005)

cents/gallon

(yen/litre)

|              | <u>LOW</u> | <u>HIGH</u> |
|--------------|------------|-------------|
| • Basic Tax* | 7.5        | 31.0        |
|              | (2.3)      | (9.3)       |

\*( Plus sales taxes, local option taxes)

# Recent U.S. State Gasoline Tax Rate Trends

1. Several States increase rates each year
2. More local government option additions
3. Dedication of all the fuel tax revenue to highway expenditures
4. More States considering Indexing Rates, or, legislated staged increases (e.g. Washington)

# New U.S. Legislation SAFETEA-LU, August 10, 2005

## Funding Provisions

- Highway Expenditures: \$34B in 2005  
\$42B in 2009
- Annual Funding Level Guaranteed to 2009
- Highway Trust Fund Excise Taxes and Fees“ Walled Off” for Transportation

# New U.S. Legislation SAFETEA-LU, August 10, 2005

## Funding Provisions (cont'd)

- Gas, Truck, Tire Taxes Extended to 2011
- Highway Account Trust Fund Balance:
  - 2004=\$11 B
  - 2010 <\$0B
- Two Commissions on Future Revenue Options

# New U.S. Legislation SAFETEA-LU

## August 10, 2005

### Major Program/Policy Changes

- New Core Highway Safety Program
  - \$1.3 B/ Year
  - State Strategic Safety Plans
- \$15 B Private Activity Bonds
- Project Management and Finance Plans for Projects > \$500M
- Standards for State DOT Cost Estimates

# New U.S. Legislation SAFETEA-LU

## August 10, 2005

### Major Program/Policy Changes (cont'd)

- Streamlining Environmental Clearances
- New Freight Programs for Training, RD&T, Rest Areas, Corridors, Information Systems
- Enhanced Emphasis on Congestion, Traffic Incidents
- Performance Measures for Safety, Traffic Incidents, Project Delivery (Time, Cost, etc.)

# **New U.S. Legislation SAFETEA-LU**

## **August 10, 2005**

Surface Transportation Needs  
(Section 1909)

- **Report to Congress by July 1, 2007**
- **Long-range Investment Requirements and Revenue Sources for Surface Modes**
- **Legislative and Policy Options for Interstate System for next 15, 30, and 50 years**

**(Current Interstate System: 75,300km Total;  
4,530 km Toll Roads)**



**THANK YOU**  
**Domo Arigato**

[AKane@aashto.org](mailto:AKane@aashto.org)

[www.transportation.org](http://www.transportation.org)