

Performance Management of Road Administration in Japan

March 2004

Performance Management Office
Road Bureau, Ministry of Land, Infrastructure and Transport

History of the Performance Management in Japan

Significance of Outcome-based Road Administration Management

Making road management efficient

To spread principle based on outcome to each division and aim for reform of administrative management

Improving transparency of road administration

Prior numerical targets, appropriateness of the targets, effects of measures and projects implemented, including related data prepared by each prefecture, should be released as Performance Plans and Reports on Degree of Achievement so that the nation can check the details.

Building up of Cycle of Management

Framework that allows numerical targets to be declared beforehand, degree of achievement to be evaluated afterward, and results of evaluation to be reflected in the subsequent administration management

This is the first fiscal year in which Road Administration Management will make a round (Report on Degree of Achievement for fiscal year 2003 and Performance Plan for fiscal year 2004 to be released on June 30)

1. Recommendation of the Road Subcommittee, Infrastructure Development Council (August 2002)

Outline From **"It's time to change - For Better Living, a Better Economy and a Better Environment"**

Chapter 4 Basic Direction of Road Administration Reform

4-3 Reform of Administration System

(1) Basic viewpoint

- It is important to shift to an outcome-based road administration that achieves its mission by ensuring good services provided by roads.

(2) Direction of reform

- Exact understanding of road users' needs and accurate identification of and concentration on the most effective investment choices should make a great difference.
- Establishing an evaluation system using outcome indicators that clearly show policy goals is essential.

Chapter 6 Administration System Reform

6-1 Distinction by Evaluation System

(1) Introduction of an evaluation system for distinction

- An evaluation system using indicators that reflects the outcome of programs and projects (outcome indicators) should be incorporated into administration management, and efficient and effective implementation of projects should be aimed for.

(2) Improvement of evaluation of projects

- Evaluation of projects based on consistent criteria should be carried out.

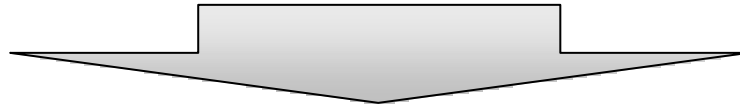
(3) Improvement of policy evaluation

- Road administration should shift to a type of operation that uses outcome indicators as the guiding principle.
- Analysis and evaluation of achievements according to the outcome indicators should be carried out every year.
- Results should be appropriately assimilated into the budgeting process.

Approaches to Road Administration Management for Road Administration in Japan

Building a cycle of management in fiscal year 2003 marked the start

March 2003	Establishment of Road Administration Management Committee
April 2003	Establishment of Performance Management Office in the Road Bureau
June 2003	Recommendation of "Shift to Outcome-based Road Administration Management-From Theory to Practice"
July 2003	Formulated and released the Fiscal Year 2003 Performance Plan for Road Administration. < This marked the start of a new outcome-based road administration management. >
July 2003	Performance Plans were formulated at the regional levels of each prefecture.
August 2003	Budget request for fiscal year 2004 was made.
October 2003	Cabinet approved the long-term plan for the main development of social infrastructure.



Putting cycle of management into practice in fiscal year 2004

April 2004	Linking budget to outcome (introduction of type of budget based on purchase of outcome).
June 2004	Formulate and release Report on Degree of Achievement for Fiscal Year 2003 and Performance Plan for Fiscal Year 2004.

Orientation of Road Administration

- 1) Reflection of user-needs**
- 2) Comprehensive and approach**
- 3) Deep environmental consideration**
- 4) Collaboration with users and citizens**
- 5) Cost-effectiveness assessment**
- 6) Transparent and effective policy making process**

Recent Improvements and Trial-Runs in Adm.Systems

【 Policy Making Stage 】

“Outcome-based Road Policy Management”

【 Project Evaluation Stage 】

“Comprehensive Evaluation”

(incl. simple Cost/Benefit Evaluation)

【 Project Planning Stage 】

“Road Planning Scheme based on Comprehensive Assessment and Public Involvement”

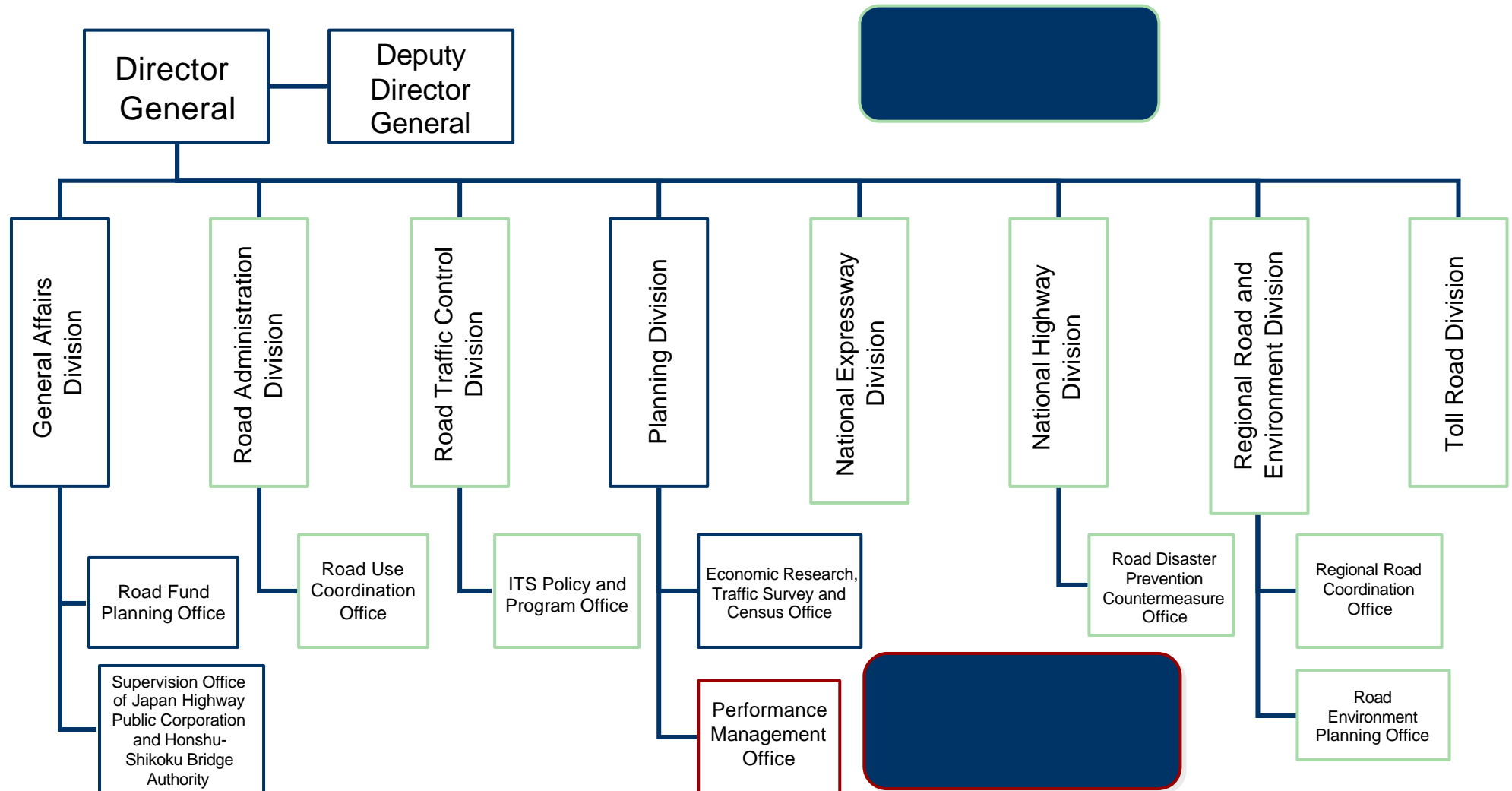
(a kind of “Strategic Environmental Assessment”: SEA)

【 Field Management Stage 】

“Road Performance Management” (Road Management Scheme based on Collaboration with Users”

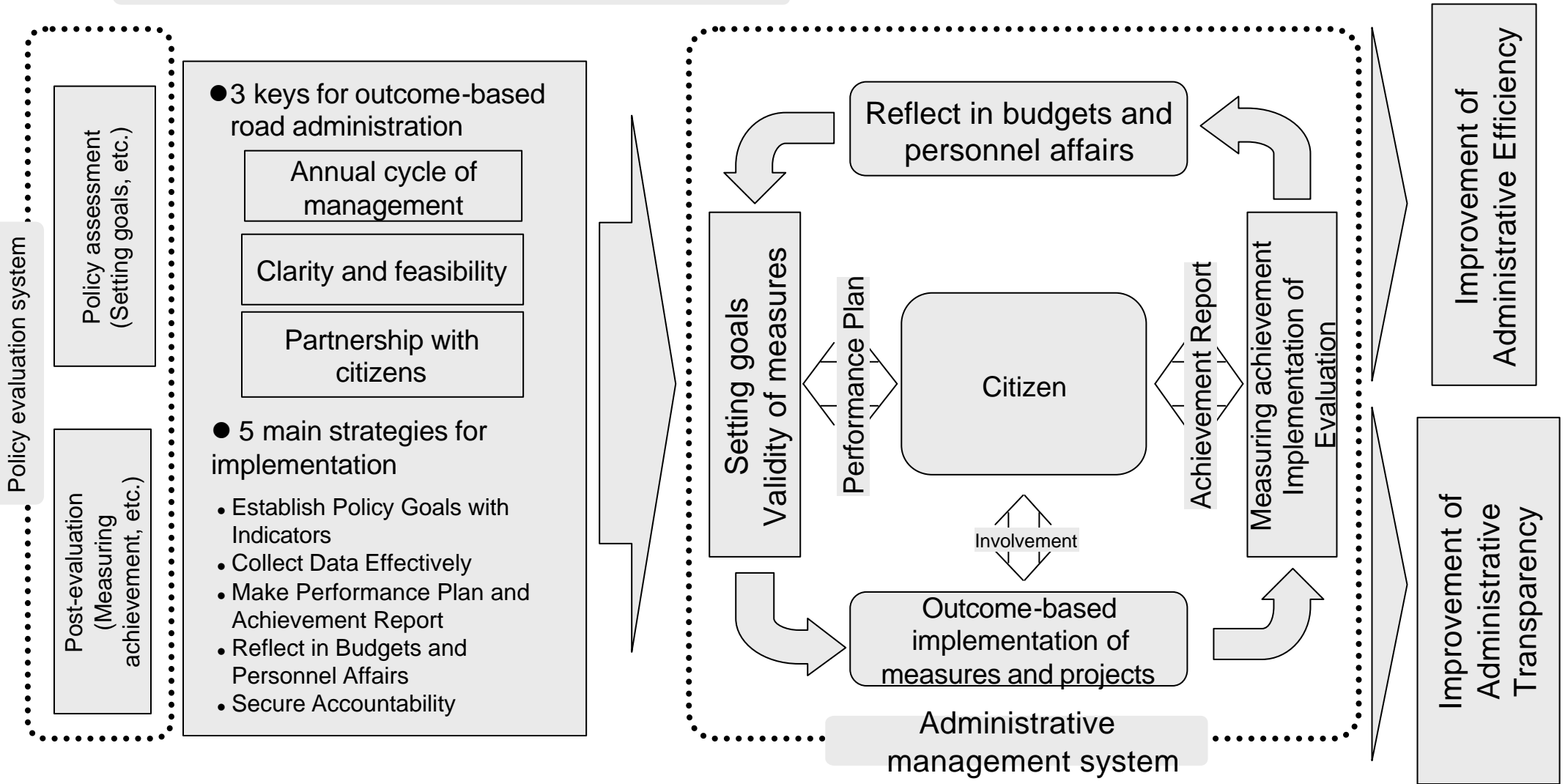
2. Establishment of The Performance Management Office

■ Organization of the Road Bureau



3. Advisory Committee for Public Management of Road Administration

Management shifting from "theory" to "practice"



4. Outline of “Performance Plan for Road Administration”

■ Starting “outcome-based” road administration from 2003

- Implement of an outcome-based public management system where numerical targets set beforehand using indicators(outcome indicator) that express outcome of road projects, evaluate afterwards, and then reflect in the subsequent measures and projects from 2003

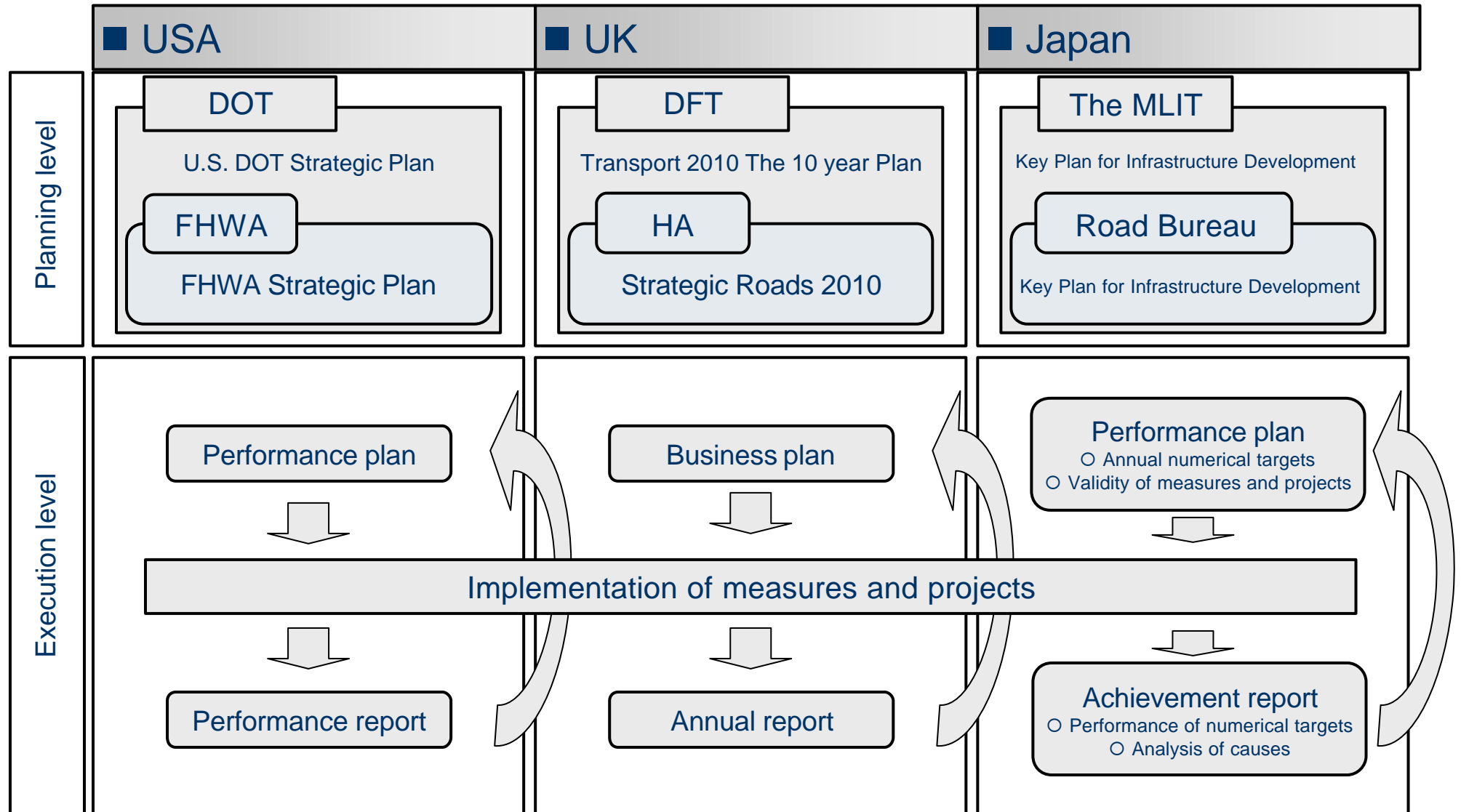
■ Making “Performance Plan” which indicates the numerical targets to be achieved in a year’s time using 17 indicators

- Compile and disclose as “Performance Plan for Road Administration”, which indicates the setting numerical targets to be achieved in a year’s time using 17 indicators such as “time loss due to road congestion,” “hours of road work,” and “Ratio of death and injury due to road accidents” and evaluating the validity of the measures and projects for achieving targets concerning outcomes of road policy based on the budget in 2003.

■ Evaluating degree of achievement after a year and reflecting it in the subsequent administration

- The degree of achievement for each numerical target is measured after a year, the reason analyzed if it has not been met, and the evaluation result is compiled and disclosed as the “Achievement Report.” Furthermore, the evaluation result is properly reflected in the subsequent measures and projects.

The Way Public Management of Road Administration Should Be



Performance Indicators of Each Policy Theme

Policy Theme	Performance Indicator
1.Vitality	Time loss due to traffic congestion (congestion monitoring zone)
	Ratio of ETC usage
	Hours of road work
	Ratio of high standard road usage (Targeted traffic that will be newly switched over to expressways during the current fiscal year)
	Ratio of roads with access to hub airports and ports
	Ratio of main cities in neighboring regions that are connected to each other by an upgraded national road
	% of people who are able to have a safe and pleasant drive into the city, the center or daily life, in under 30 min
2.Living	% of barrier-free main roads in the vicinity of passenger facilities with a daily user volume of more than 5,000
	Percentage of trunk roads in urban areas without utility poles
3.Safety	Ratio of death and injury due to road accidents
	Road structure maintenance ratio $\frac{\text{Bridge}}{\text{Pavement}}$
	Percentage of cities that have rescue routes covering a wide area in the event of disasters
4.Environment	Reduction of CO ₂ emission
	Ratio of NO ₂ environmental goal achievement
	Ratio of SPM environmental goal achievement
	Achievement rate of required limits on nighttime noise
Road Administration Reform	Level of road user satisfaction
	Number of hits on homepage

5. Overview of the "Key Plan for Infrastructure Development"

■ Key Plan for Infrastructure Development Law

Approved on March 28, 2003, promulgated on March 31, 2003, and implemented on April 1, 2003

(jointly submitted by the National Police Agency, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Land, Infrastructure and Transport)

Measures for intensive, effective and efficient promotion of infrastructure development projects should be taken, including development of infrastructure development key plans.

Plans for 9 projects of different genres



Integration



Shift to planning with emphasis on prioritization and integration

Note: 2002 and 2003 were the final years. Plans in double frames have their own respective urgent measures laws.

Key Plan for Infrastructure Development

= The target period is five years, starting in fiscal 2003.

○ Infrastructure development projects included in the Key Plan

Roads, traffic safety facilities, railroads, airports, ports and harbors, route signs, parks and green areas, sewerage, rivers, sand control, landslides, steeply sloping ground, coasts (including projects and "software" measures and policies integrally implemented to enhance effectiveness of projects)

○ Basic philosophy

Thorough decentralization of power, consideration of effective use of local characteristics and private sector resources, etc.

○ Plan items

(1) Outline of the key targets and projects to be implemented for achievement of the targets

→ Outcome-based targets should be prioritized (total project cost should not be included).

(2) Measures for effective and efficient implementation of projects

→ Clarifying specific reform action policies for infrastructure development

- Seeking understanding and cooperation of local residents
- Ensuring linkage between projects
- Cost reduction
- Effective use of existing stock
- Appropriate bidding and contracting procedures, etc.

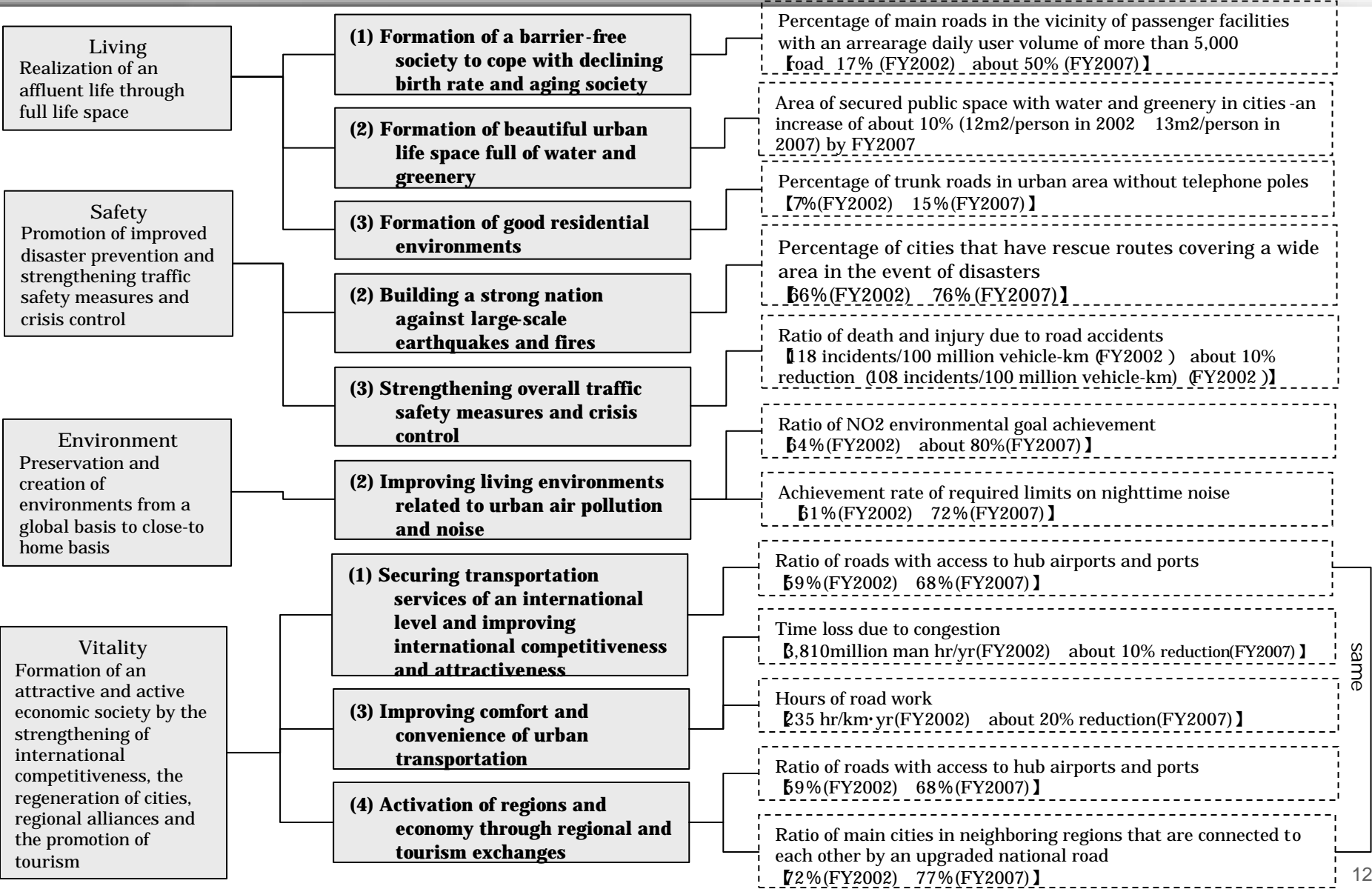
(3) Other items necessary for intensive, effective and efficient implementation of projects

<Process for development and implementation of plans>



- Re-examination of a plan during its implementation in order to incorporate changes in social and economic conditions should be made obligatory.
- Policy evaluation should be made.
- Systems related to a plan should be reviewed in the last year of the plan and necessary measures, if any, should be taken accordingly.

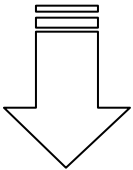
Priority Targets and Indicators in "Key Plan for Infrastructure Development"
 (Indicators are shown in Chapter 8 "Priority targets for implementing infrastructure development projects and a summary of infrastructure development projects that need to be carried out effectively and efficiently to achieve them" and those that are related to roads have been extracted.)



same

First Report on Degree of Achievement to be released-June 2004

July
2003



June
2004

Fiscal Year 2003 Report on Degree of Achievement and Fiscal Year 2004 Performance Plan to be released on June 30.

Fiscal year 2003 Performance Plan, which uses 17 indicators and shows numerical targets for a year later, was released (typical indicators: time loss due to road congestion, time used for road works, rate of ETC usage, casualty rate in road traffic, etc).

Declaration: Evaluation on degree of achievement to be made a year later and this will be reflected in future administrative management.

Fiscal Year 2003 Report on Degree of Achievement and Fiscal Year 2004 Performance Plan to be released on June 30.

To practice outcome-based road administration management.

- 1) Releasing not only the degree of achievement of nationwide targets but also the situation of achievement by each prefecture.
 - Releasing current value (degree of achievement) for indicators which show outcome.
 - Releasing data on situation of achievement, including ranking of indicators for the prefectures and national highway work offices.
- 2) Focus on analyzing effects of measures and projects implemented.
- 3) Introduction of framework that leads reflection to improvement
 - Introduction of system that supports administrative judgment.
 - ◆ Priority indication system (temporary name)
 - ◆ Benchmarking system

Targets for Each Policy Theme and Degree of Achievement (1/4)

Base Results 2002 Targets for 2003 Current Results for 2003 Targets for Next Year (2004) Planned Targets for 2007

Reducing congestion~ Making road traffic smooth~

Project cost for smooth transportation (¥73.91 billion in 2004)

Time loss due to traffic congestion (congestion monitoring zones)		610 million person-hour/annum	About 590 million person-hour/annum (reduction of about 3%)	About 590 million person-hour/annum (reduction of about 3%)	About 570 million person-hour/annum (further reduction of 3%)	Reduction of about 10%
Hours of road work		201 hours/km/annum	193 hours/km/annum (reduction of about 4%)	186 hours/km/annum (reduction of about 7%)	185 hours/km/annum (reduction of about 8%)	Reduction of about 20%
Ratio of ETC usage	Nationwide	5%	About 15%	16%	30%	About 70%
	Metropolitan Expressway	6%	About 20%	19%	40%	About 85%
	Hanshin Expressway	3%	About 15%	11%	35%	About 85%

Targets for Each Policy Theme and Degree of Achievement (2/4)

	Base Results 2002	Targets for 2003	Current Results for 2003	Targets for Next Year (2004)	Planned Targets for 2007
Linking regions~ Cooperation among regions~ Project cost for regional alliance support (¥2,084.3 billion in 2004)					
Ratio of high standard road usage (Targeted traffic that will be newly switched over to expressways during the current fiscal year)	13%	13% (increase of 2.1 million unit km)	13% (reduction of 200,000 unit km)	13% (2.9 million unit km)	15%
Ratio of roads with access to hub airports and ports	59%	61% (access to Aomori port)	61%	61% (access to Central Japan International Airport)	68%
Ratio of main cities in neighboring regions that are connected to each other by an upgraded national road	72%	73%	73%	74%	About 77%
% of people who are able to have a safe and pleasant drive into the city, the center of daily life, in under 30 min	63%	About 64% (increase of about 800,000 people)	About 64% (increase of about 600,000 people)	65%	About 68%

Targets for Each Policy Theme and Degree of Achievement (3/4)

		Base Results 2002	Targets for 2003	Current Results for 2003	Targets for Next Year (2004)	Planned Targets for 2007
Protecting Roads~ Road Maintenance and Administration~		Maintenance and repair project cost (¥262.5 billion in 2004)				
Road structure maintenance ratio	Bridges	86%	About 87%	87%	89%	About 93%
	Pavement	91%	Maintain current level	93%	Maintain current level	Maintain current level
Percentage of cities that have rescue routes covering a wide area in the event of disasters		66%	68%	68%	70%	About 76%
Improving the Environment~ Preservation of environment~		Project cost for improving roadside environment (¥126.3 billion in 2004)				
Ratio of NO₂ environmental goal achievement		64%	About 67%	67% (new indicator: 53%)	- (new indicator: maintain current level)	- (new indicator: about 90%)
Ratio of SPM environmental goal achievement		-	About 10%	9% (new indicator: 78%)	- (new indicator: maintain current level)	- (new indicator: maintain current level)
Achievement rate of required limits on nighttime noise		61%	About 63%	64%	65%	About 72%
Reduction of CO₂ emission		261 million tons CO ₂	Reduce CO ₂ emission in the transportation sector to about 250 million tons by the year 2010			

Targets for Each Policy Theme and Degree of Achievement (4/4)

	Base Results 2002	Targets for 2003	Current Results for 2003	Targets for Next Year (2004)	Planned Targets for 2007
Reducing traffic accidents~ Building safe and reassuring roads~ Project cost for improving transportation safety facilities (¥450.7 billion in 2004)					
Ratio of death and injury due to road accidents	118.4 incidents/100million vehicle km	About 116 incidents/100million vehicle km (reduction of about 2%)	119.9 incidents /100 million vehicle km (increase of about 1.3%)	About 114 incidents /100 million vehicle km	About 108 incidents/100 million vehicle km (reduction of about 10%)
% of barrier-free main roads in the vicinity of passenger facilities with a daily user volume of more than 5,000	About 17%	About 21%	About 25%	About 30%	About 50%
Removing Telephone Poles and Wires~ Creating beautiful landscape~ Project cost for improving cable utility conduits (¥228.7 billion)					
Percentage of trunk roads in urban areas without utility poles	About 7%	About 8%	About 9%	About 10%	About 15%
Reform of Road Management~ Improvement of Accountability~					
Level of road user satisfaction	2.6 points	About 2.7 points	2.6 points	About 2.8 points	3.0 points
Number of hits on homepage	15.46 million access/annum	About 26 million access/annum	23.50 million access/annum	About 43 million access/annum	About 100 million access/annum

Establishing New Indicators

Ratio of crossings where route numbers can be recognized, time lost due to railroad crossings, and ratio of city areas where problems related to disasters exist

Issues for outcome-oriented road administration

-- departure from the idea that plans with indicators automatically make administration "outcome-oriented" --

The first step :
measurement

Measure outcomes using indicators

To formulate performance plan and performance report by measuring outcomes using indicators and setting annual numerical target being aware that measurement itself is only a part of outcome-oriented administration.

The second step :
diagnosis
representation

Gather materials (best practices or databases) for consciousness for outcome-oriented administration

To gather best practices to share them with all worksites all over the country, and to order data with which every work office became able to make diagnoses with numerical data representing actual situation instead of business instincts of persons responsible.

The third step :
decision
management

Build in "outcome-oriented" consciousness into routine procedures

To change consciousness of staffs into outcome-oriented by building outcome-oriented activities in budget request, execution plan or other annual routine procedures.

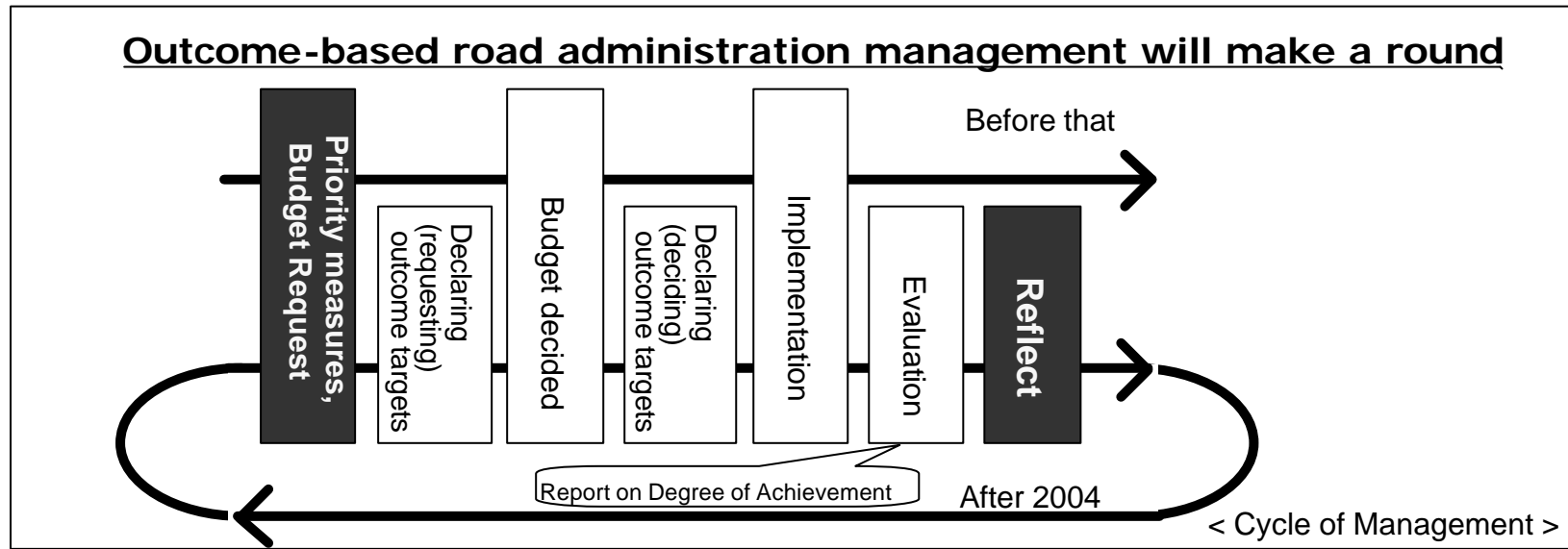
The fourth step :
communication

Communicate strategically

To establish communication with publics and stakeholders based on the facts representing the revolution of road administration, utilizing several measures including visual contents (e.g. 3-D maps).

Priority Measures and Budget Request based on the First Report on Degree of Achievement

Evaluate degree of achievement and put into practice cycle of management that makes most of that in subsequent cases



Releasing the first Report on Degree of Achievement—June

Priority measures should reflect report details

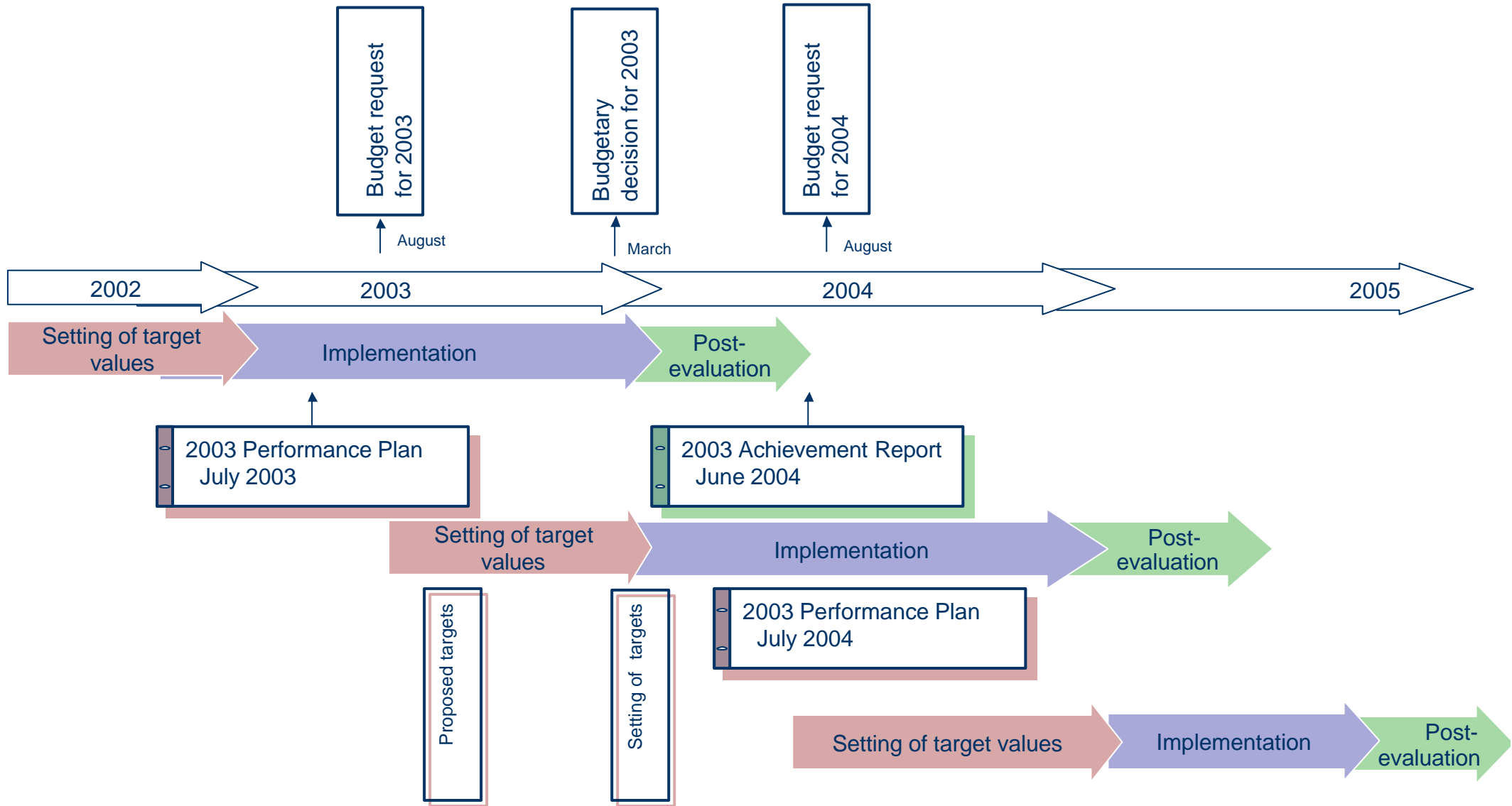
- Place management as the operation idea for administration, and each of the priority targets should reflect, for the first time, evaluation of approaches and knowledge gained from the Report on Degree of Achievement which will make a round.

Budget request should reflect report details

- Requesting review of cost items, such as project cost for improving transportation safety facilities, and a new subsidy system

Establishment of a Management Cycle

Establishing an Administration Process That Prioritizes the Outcome - Taking Fiscal Year 2003 As an Example -

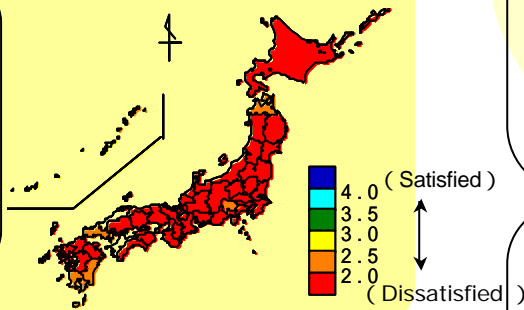


Policy Theme: Linking Regions

Example: Ratio of high standard road usage
 (Percentage remained almost unchanged from 13% in 2002 to 13% in 2003.)
 Improve congestion on trunk roads, accidents on roads for living, roadside noise by letting the high standard roads share automobile traffic.

- Out of the 11 items surveyed on the degree of satisfaction, tolls for toll roads received the lowest evaluation.
- Tendency to avoid toll roads (Toll sections: Traffic reduced by about 800,000 vehicle km)

【Degree of satisfaction over tolls】



Subsequent administrative management should reflect evaluation results

Develop measures to aim for establishment of full-scale, flexible tolls for toll roads

Development of network for expressways, etc.

Analyze effects of measures and projects

(1) Confirm the effects of setting flexible toll

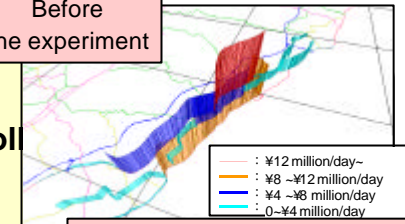
Example: Joban Expressway (Hitachi district—Ibaraki Prefecture)

- Carried out social experiment of halving tolls for a month.

(Reduction of about ¥600,000 per day due to toll discount.)

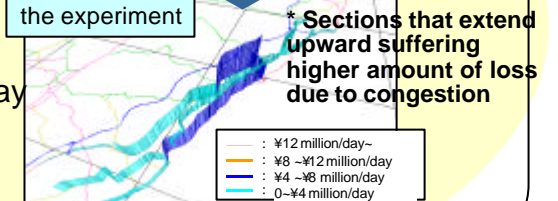
(Effect of about ¥15 million per day due to easing of congestion.)

Before the experiment



Amount of loss due to congestion: About ¥51.2 million/day

During the experiment



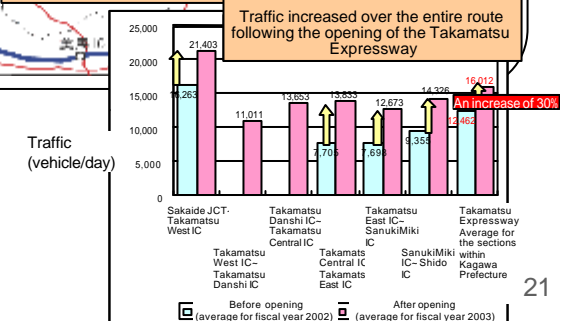
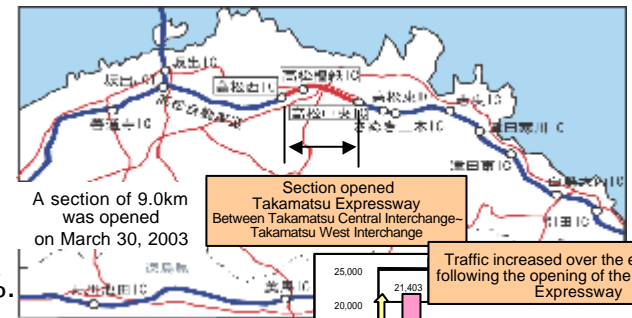
Sections that extend upward suffering higher amount of loss due to congestion

Amount of loss due to congestion: About ¥36.5 million/day

(2) Linking broken-off expressways leads to promotion of use of the entire route

Example: Takamatsu Expressway (Kagawa Prefecture)

- Traffic increased significantly over the entire line. Increase averaged about 30%.



Link to improvement

Policy Theme: Reducing Congestion

Example: Promotion of spread of ETC system and its utilization

[Expanding nationwide usage of ETC and nationwide target is 15%.]

If ETC usage increases to 50%, congestion at toll gates will almost be solved.

This is intended to improve roadside environment, convenience of users, and improvement in comfort.

Subsequent administrative management should reflect evaluation results

Making exclusive lanes for ETC at tollgates

- To further raise the convenience of ETC users, promotion of establishing 24-hour exclusive lanes

Implementation of toll discount for ETC system users

- Implementation of discount for long-distance nighttime users of expressways and discount for nighttime users of the Metropolitan Expressway

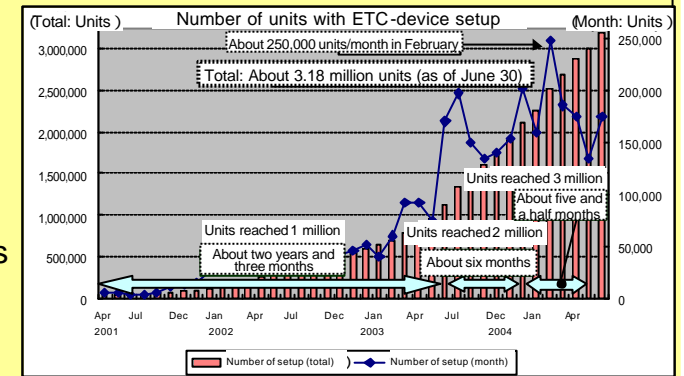
Promotion of switching of frequent, large users to ETC by abolishing separate payment for expressways and large amount coupon tickets for urban expressways

- Implementation of support system such as monitoring and leasing together with social experiment

Analyze effects of measures and projects

(1) Implementation of soft measures

- Increase the number of toll gates throughout Japan so that ETC system can be used. (ETC system can basically be used at all toll gates by April 2004.)
- Implementation of toll discount for users of the ETC system
- Implementation of support for the purchase of ETC-system-mounted automobiles and lowering prices of such automobiles

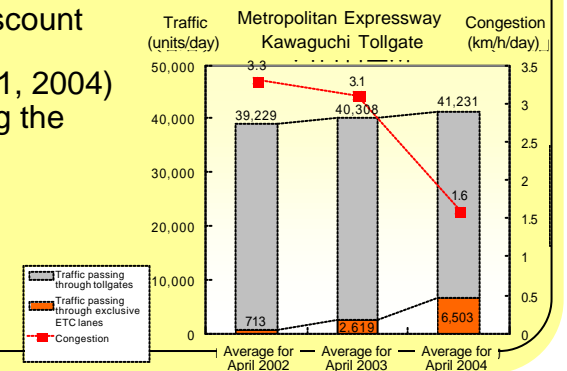


Changes in the number of automobiles with ETC-device setup

(2) Utilization of ETC system

- Social experiment of nighttime discount on the Metropolitan Expressway (From November 28, 2003 to March 1, 2004) (Rate of use of ETC increased during the discount time zone.)

- Kawaguchi tollgate on the Metropolitan Expressway While traffic increased by 5%, congestion length halved due to ETC (3.3 → 1.6km/h/day)



Link to improvement

Policy Theme: Reducing Congestion

Analyze effects of measures and projects

Example: Hours of road works

[Reduction of 7% from 201 hours/yearly km in 2002 to 186 hours/yearly km in 2003]

Reduction of road-work hours is necessary as congestion and traffic control caused by road works deteriorate the convenience of road users.

Subsequent administrative management should reflect evaluation results

Implement thoroughly the management to reduce road works (add up monthly road work hours and release results)

With regard to road repair works, road administrators themselves should actively cope with reduction by disclosing work information.

Link to improvement

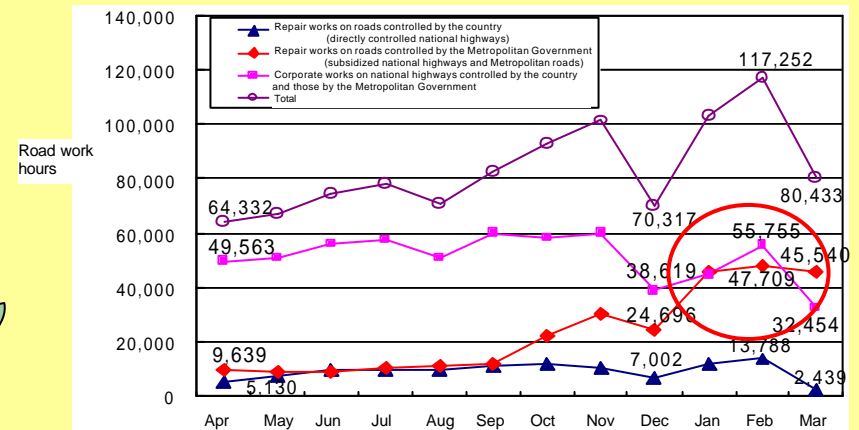
By coping with external evaluation model, reduce congestion caused by road works.

In the 23 Tokyo wards, works during the end of the year and that of fiscal year have been stopped.

- Slimming operation for road works. From December 20, 2003 to December 31, 2004. (For directly controlled national highways, this started on December 15.)
- Control of road works based on rule for slimming Tokyo. From March 1, 2004 to March 31, 2004

Annual rate of reduction in the fiscal year 2003 compared with fiscal 2002
 Nationwide (directly controlled national highways): reduction of about 7%
 23 wards of Tokyo (directly controlled national highways and Metropolitan controlled roads): reduction of about 5%

Road repair works in the 23 wards of Tokyo increased by about 28% and coping with this problem is still insufficient.

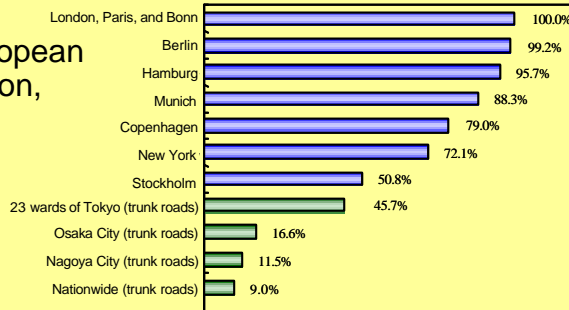


Policy Theme: Removing Telephone Poles and Wires

Example: Ratio of no telephone poles
 [Improved from 7% in 2002 to 9% in 2003]

Promotion of no telephone poles to make walking space barrier free, preserve historic streets and houses, and secure evacuation roads, which is a measure against urban disaster prevention, and, from the standpoint of forming good living environment.

• Compared with major European and US cities, such as London, Paris, and New York, cities in Japan lag behind significantly.



Subsequent administrative management should reflect evaluation results

Promotion of no telephone poles based on “Telephone-pole-free promotion program” which started in fiscal year 2004.
 Continue with the promotion of no telephone poles along trunk roads in the busy parts of towns.
 Development of surface of main non-trunk roads in districts where historic streets and houses are to be preserved.
 To further promote no-telephone poles movement, costs should be reduced significantly.

Analyze effects of measures and projects

Significant difference among Tokyo, Hokkaido, and other Pref. Ordinance-designated cities

Top three	Worst three
23 wards of Tokyo: 45.7%	Sapporo City: 4.3%
Hiroshima City: 18.7%	Chiba City: 7.1%
Osaka City: 16.6%	Saitama City and Kobe City: 7.8%

Tokyo, Hokkaido, and other Prefectures

Top three	Worst three
Tottori Pref.: 30.9%	Ehime Pref.: 1.8%
Kagoshima Pref.: 29.4%	Nara Pref.: 2.2%
Greater Tokyo: 28.5%	Mie Pref.: 2.7%

Significant difference among different types of roads

Directly controlled national highways have a high percentage of about 18%. Compared with this, subsidized national highways have a low percentage of about 5% and other prefecture roads of about 7%. Trunk roads have a percentage of 9%, but non-trunk roads controlled by cities, wards, towns, and villages have a percentage of only 1%.

	Trunk roads			Trunk roads-Total	Non-trunk roads Cities, wards, towns, and villages
	Directly controlled national highways	Subsidized national highways	Tokyo, Hokkaido, and other Pref. roads		
Ratio of no telephone poles	18%	5%	7%	9%	1%

Link to improvement

Regional Difference in Laying Wires Underground.

31% in Tottori, 2% in Ehime: Degree of Achievement in 2003 According to MLIT Report.

Road Administration Management in Regional Levels on Japan

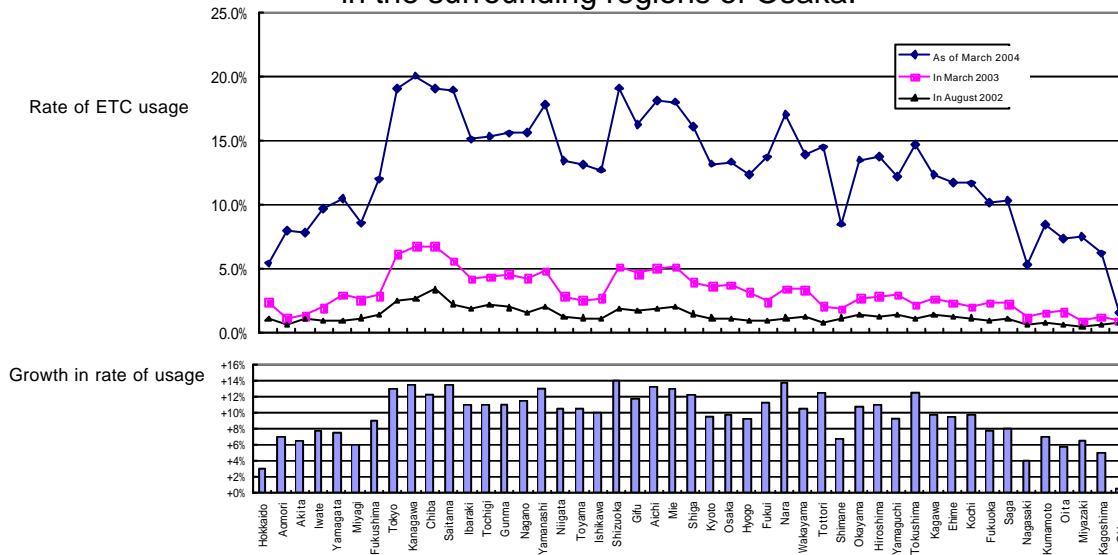
- **Disclosing back data for each prefecture at the same time, such as congestion status**
 - Disclose together with the “Performance Plan” relevant back data such as indicator value for each prefecture,
in order to enable the public to check the validity of the numerical targets and the measures and projects for achieving them.

- **Making “Performance Plan” for each prefecture**
 - For road administration that meets the characteristics and needs of a region,
“Performance Plan” will be formulated and disclosed for each region, such as prefecture,
which indicates the numerical targets and measures and projects for achieving them in addition to the undertaking at the national level.

Release Information on Situation of Achievement for Tokyo, Hokkaido, and other Prefectures

Release information on not only the degree of achievement of national targets but also that on situation of achievement in Tokyo, Hokkaido, and other Prefectures.

In regard to large cities, rate of ETC usage is low in the surrounding regions of Osaka.



Indicators	Rate of ETC usage (as of March of fiscal year 2004)	Rate of ETC Usage		Rate of ETC usage (as of March 2003)	Growth in the rate of usage (2003-2002)	Growth rate in the rate of usage, 2003/2002
		Number of vehicles that used ETC compatible toll gates (Thousand vehicles/day)	Number of vehicles that used ETC. (Thousand vehicles/day)			
Nationwide	16%	7,374	1,167	5%	11%	3.4
Hokkaido	5.5% (45)	131 (10)	7.1 (22)	2.4% (31)	+3.0% (46)	2.3 (46)
Aomori	8.0% (40)	15 (44)	1.2 (44)	1.1% (45)	+6.9% (38)	7.0 (2)
Akita	7.8% (41)	17 (43)	1.3 (42)	1.4% (42)	+6.5% (41)	5.7 (5)
Iwate	9.7% (36)	34 (34)	3.3 (35)	2.0% (38)	+7.7% (35)	4.8 (14)
Yamagata	10.6% (33)	19 (40)	2.0 (40)	3.0% (21)	+7.6% (36)	3.6 (36)
Miyagi	8.6% (37)	75 (17)	6.4 (24)	2.6% (28)	+5.9% (42)	3.2 (42)
Fukushima	12.0% (30)	54 (24)	6.5 (23)	2.9% (22)	+9.1% (32)	4.1 (25)
Tokyo	19.1% (4)	919 (3)	175.6 (2)	6.2% (3)	+12.9% (8)	3.1 (43)
Kanagawa	20.1% (1)	1,073 (1)	215.5 (1)	6.8% (2)	+13.3% (4)	3.0 (44)
Chiba	19.1% (3)	575 (5)	110.0 (4)	6.8% (1)	+12.3% (11)	2.8 (45)
Saitama	19.0% (5)	530 (6)	100.8 (5)	5.6% (4)	+13.4% (3)	3.4 (41)
Ibaraki	15.1% (15)	95 (15)	14.4 (12)	4.2% (13)	+10.9% (19)	3.6 (33)
Tochigi	15.4% (14)	52 (25)	8.0 (20)	4.4% (11)	+10.9% (18)	3.5 (39)
Gunma	15.6% (13)	69 (21)	10.7 (17)	4.6% (10)	+11.0% (16)	3.4 (40)
Nagano	15.7% (12)	100 (13)	15.8 (11)	4.3% (12)	+11.4% (14)	3.7 (31)
Yamanashi	17.9% (8)	44 (29)	7.8 (21)	4.8% (8)	+13.1% (6)	3.7 (30)
Niigata	13.4% (22)	71 (18)	9.5 (18)	2.9% (23)	+10.5% (22)	4.7 (16)
Toyama	13.1% (25)	30 (37)	4.0 (31)	2.6% (29)	+10.5% (21)	5.1 (9)
Ishikawa	12.8% (26)	32 (36)	4.1 (29)	2.8% (25)	+10.0% (24)	4.6 (17)
Shizuoka	19.2% (2)	138 (8)	26.5 (8)	5.2% (5)	+14.0% (1)	3.7 (29)
Gifu	16.3% (10)	67 (22)	11.0 (16)	4.6% (9)	+11.7% (13)	3.5 (37)
Aichi	18.2% (6)	382 (7)	69.5 (7)	5.0% (7)	+13.2% (5)	3.6 (32)
Mie	18.1% (7)	117 (12)	21.1 (9)	5.2% (6)	+12.9% (7)	3.5 (38)
Shiga	16.1% (11)	56 (23)	9.1 (19)	4.0% (14)	+12.1% (12)	4.0 (27)
Kyoto	13.2% (24)	119 (11)	15.8 (10)	3.7% (16)	+9.5% (28)	3.6 (34)
Osaka	13.4% (23)	1,057 (2)	141.5 (3)	3.7% (15)	+9.7% (26)	3.6 (35)
Hvogo	12.4% (28)	613 (4)	75.7 (6)	3.2% (19)	+9.2% (31)	3.9 (28)
Fukui	13.7% (20)	23 (39)	3.2 (36)	2.5% (30)	+11.3% (15)	5.6 (7)
Nara	17.1% (9)	76 (16)	13.0 (15)	3.5% (17)	+13.7% (2)	5.0 (12)
Wakayama	13.9% (18)	36 (32)	5.0 (27)	3.4% (18)	+10.5% (23)	4.1 (26)
Tottori	14.5% (17)	4 (47)	0.6 (47)	2.1% (36)	+12.4% (10)	6.9 (3)
Shimane	8.5% (38)	13 (46)	1.1 (46)	1.9% (39)	+6.7% (39)	4.6 (19)
Okayama	13.5% (21)	45 (28)	6.1 (25)	2.8% (26)	+10.8% (20)	4.9 (13)
Hiroshima	13.8% (19)	97 (14)	13.4 (14)	2.9% (24)	+11.0% (17)	4.8 (15)
Yamaguchi	12.2% (29)	49 (27)	6.1 (26)	3.0% (20)	+9.3% (30)	4.1 (24)
Tokushima	14.7% (16)	13 (45)	1.9 (41)	2.2% (35)	+12.5% (9)	6.7 (4)
Kagawa	12.4% (27)	28 (38)	3.5 (33)	2.7% (27)	+9.7% (25)	4.6 (18)
Ehime	11.8% (31)	35 (33)	4.1 (30)	2.4% (32)	+9.4% (29)	5.0 (11)
Kochi	11.7% (32)	18 (41)	2.1 (39)	2.1% (37)	+9.6% (27)	5.7 (6)
Fukuoka	10.2% (35)	137 (9)	14.0 (13)	2.4% (33)	+7.9% (34)	4.3 (23)
Saga	10.4% (34)	33 (35)	3.4 (34)	2.3% (34)	+8.1% (33)	4.5 (20)
Nagasaki	5.3% (46)	70 (19)	3.7 (32)	1.2% (44)	+4.1% (45)	4.4 (21)
Kumamoto	8.5% (39)	50 (26)	4.3 (28)	1.6% (41)	+6.9% (37)	5.4 (8)
Oita	7.3% (43)	36 (31)	2.7 (37)	1.7% (40)	+5.7% (43)	4.4 (22)
Miyazaki	7.6% (42)	17 (42)	1.3 (43)	0.9% (47)	+6.6% (40)	8.0 (1)
Kagoshima	6.2% (44)	40 (30)	2.5 (38)	1.2% (43)	+5.0% (44)	5.0 (10)
Okinawa	1.6% (47)	69 (20)	1.1 (45)	1.0% (46)	+0.6% (47)	1.7 (47)

High rate of usage in the surrounding regions of Tokyo and Aichi.

In the surrounding regions of Osaka, a large number of automobiles use ETC, but the rate of usage is low.

	Rate of ETC usage in FY2003	
	Target	Actual result
Japan Highway Public Corp.	-	About 16%
Metropolitan Expressway Public Corp.	About 20%	About 19%
Hanshin Expressway Public Corp.	About 15%	About 11%
Nationwide	About 15%	About 16%

Hanshin Expressway recorded an actual result of 11% which was below the target of 15%.
Even compared with the results for each prefecture, rate of usage in the surrounding regions of Osaka was below the nationwide average.

Promoting road administration management by local governments

Tokyo, Hokkaido, and many prefectures have worked out a succession of “performance plans” to disclose their numerical targets and details of measures and projects to be implemented to carry out immediately effective management of road administration that meets the features and needs of each region.



Realization of Performance-based Road Administration Management in Corporation with Tokyo Metropolitan Government

Starting from 2003, Outcome Plan was published aiming at the realization of Performance-based Road Administration

**2003 Outcome Plan for Building Roads
Tokyo Metropolitan Government**



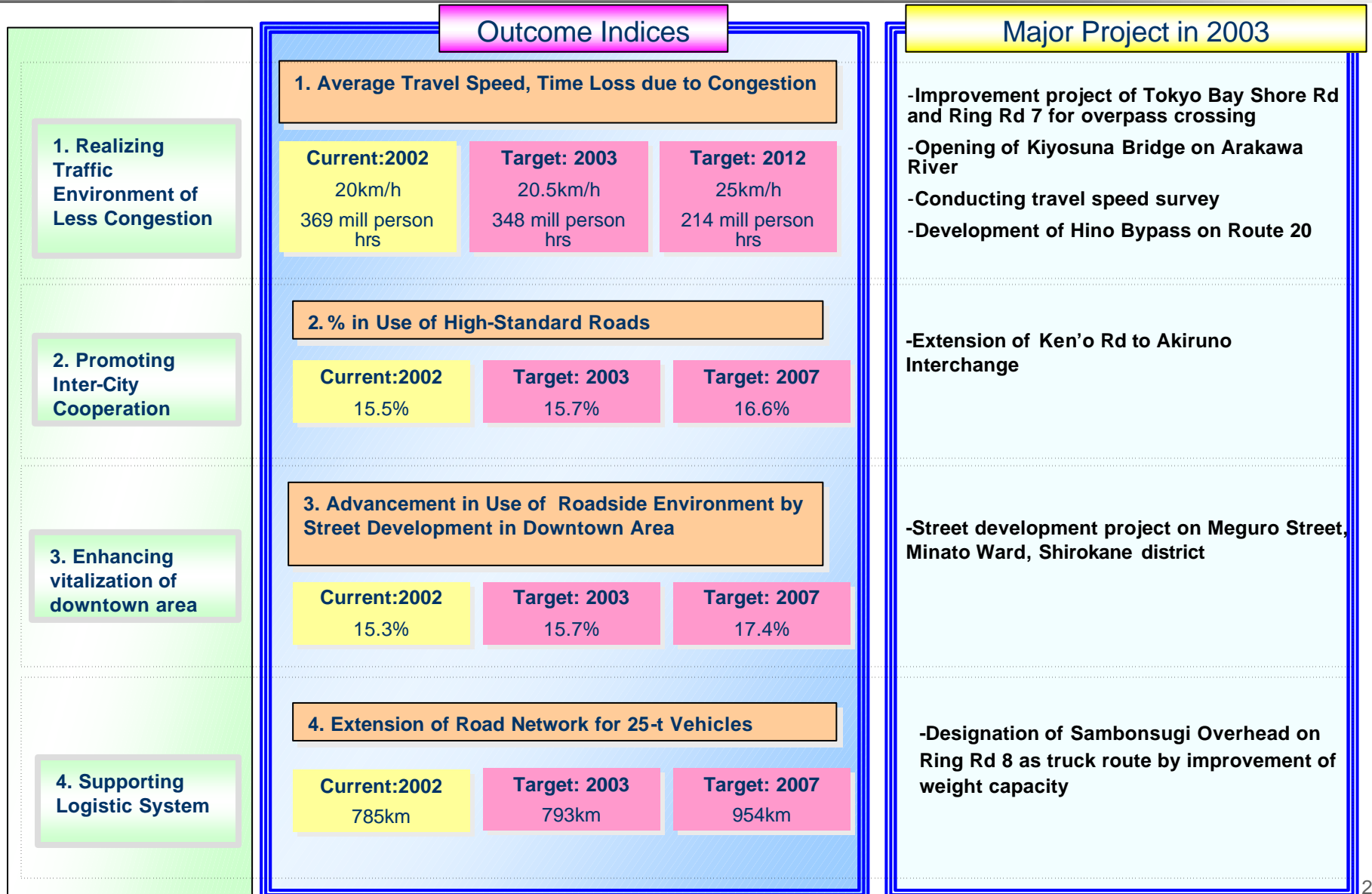
Road & Street
OUTCOME PLAN2003 @ Tokyo
~ The CAPITAL of JAPAN ~

**Tokyo Metropolitan Government
Road Council**

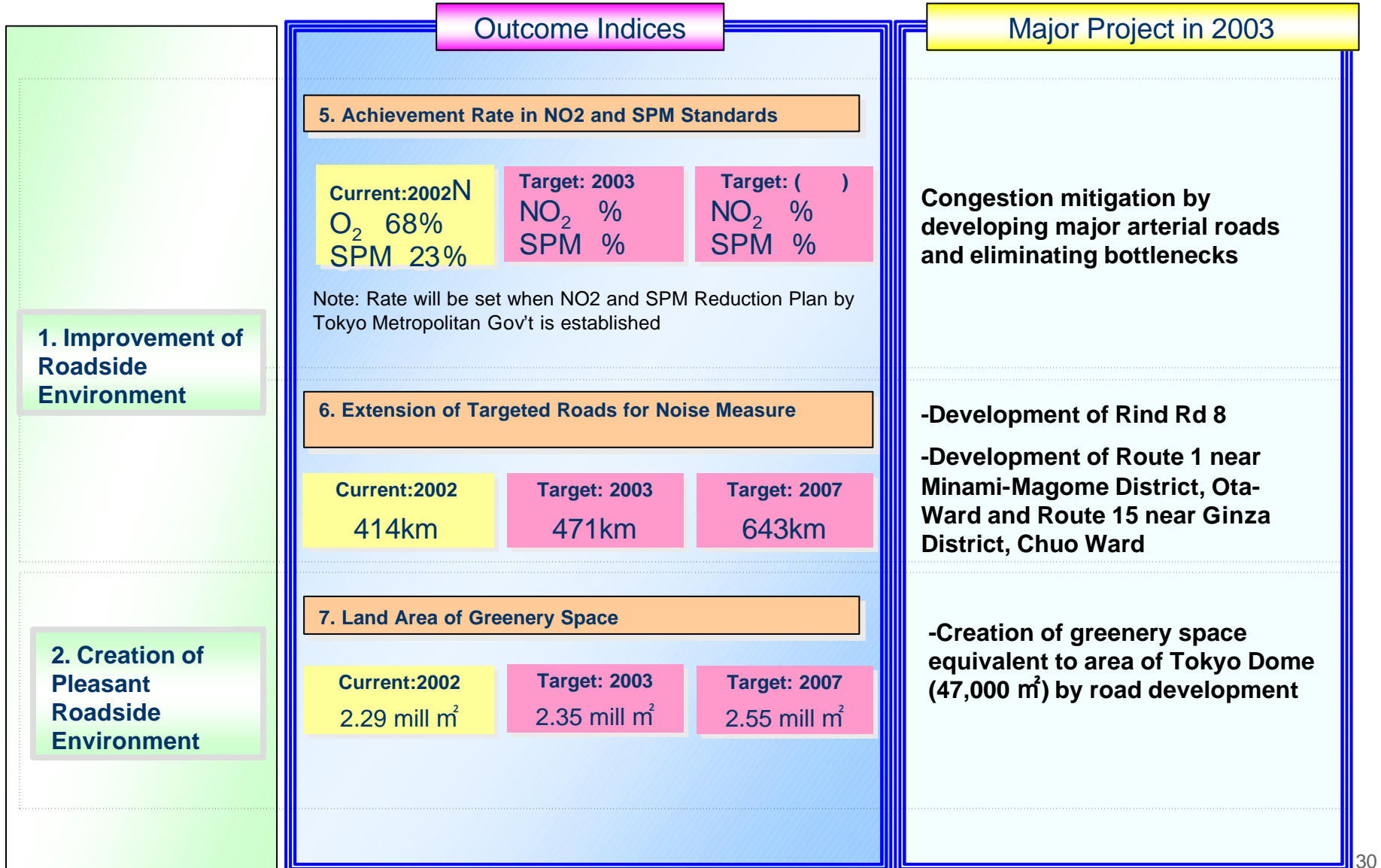
The image shows a map of Tokyo, Japan, with a green and blue color scheme. The text 'Road & Street' is written in white, 'OUTCOME PLAN2003 @ Tokyo' is in white, and '~ The CAPITAL of JAPAN ~' is in green. The map is framed by a black border.



Policy Target I: Building Roads Revitalizing and Energizing the City



Policy Target II: Building Roads Improving Roadside Environment



Policy Target III: Building Roads for Reassurance, Safety, and People's Lives

	Outcome Indices			Major Project in 2003
1. Realizing Safe Road Traffic	8. Fatal Road Accident Rate			-Reduction of through traffic on Livelihood Streets by development of arterial roads
	Current:2002 193 Accidents/100 mill VKT	Target: 2003 189 Accidents/100 mill VKT	Target: 2007 174 Accidents/100 mill VKT	
2. Developing Walkable Sidewalks for Everyone	9. Rate of Sidewalks Made into Barrier-free			-Elimination of electric power poles Route 15 near Kouan district, Minato Ward, Route 17 near Yamantocho district, Itabashi Ward, near Setagaya Daida Station Ring Rd 7
	Current:2002 41.8%	Target: 2003 45.4%	Target: 2010 100%	
3. Forming Safe and Anti-Disaster Built-up Areas	10. Rate of No Power Poles on Street			-Street development of Subsidiary Rd 54 near Chitosedai, Setagaya Ward
	Current:2002 26.8%	Target: 2003 27.8%	Target: 2007 32.1%	
4. Supporting Lives in Mountainous areas and Islands	11. Rate of Development of Roads Work as Anti-Fire Wall			-Development of Chichijima circular road
	Current:2002 49.1%	Target: 2003 49.7%	Target: 2007 54.3%	
	12. Elimination of Communities Unable to Reach their Livelihood Bases Safely			
	Current:2002 48 Communities	Target: 2003 45 Communities	Target: 2007 Reduction by 50%	

Performance Plan 2003 for roads in Yamagata Pref. (Making Yamagata Prefecture Trunk Road Council)

*Relaxing and Spacious Yamagata
To a beautiful Yamagata To an open Yamagata
To a plentiful Yamagata*



Road improvement to support new exchanges and tie-ups

Improvement of a road framework

Building of a network to unify the prefecture

Road improvement for comfortable lives

Roads that create a comfortable living space

Roads that are safe, comfortable, easy to use for living

Roads that suit the attractive regional geography

Improvement of safe and secure roads

Roads that are resilient to disasters

Promotion of traffic safety measures

Ensuring safe and secure roads in winter

Road improvement that suits the characteristics of Yamagata

Road improvement to make Yamagata attractive

Promoting flexible measures for effective and profitable usage

10 Points : Basic Direction of Road Policy

Outcome goals for Yamagata Prefecture

NOTE: Some require a certain period monitoring before the effect of the measure and project becomes apparent and the degree of achievement in relation to the numerical target cannot be verified and evaluated at the beginning of the following year.

Outcome Indicator		Target for 2003	Project Locations	Reason for Setting target Indicator Value
Indicator	Current Indicator Value			
Time Loss due to Congestion (Amount of congestion loss)	32.8 hr/yr/person 40.49 million hr/yr for the whole prefecture(2001) (¥ 121.1 billion/yr for the whole prefecture)	Reduction of 1hr/yr/person	National Road 7: Mikawa bypass National Road 13: Elevation of Matsuoka intersection	Target is to reduce of about 4hr/person in 5 year's time(2007). Target achievement that's higher than the annual average as it is the first year of the Key Plan for Infrastructure Development
No. of main congestion points	30 points(2002) (11 points in Yamagata urban areas)	Implement measures to eliminate and alleviate 6 points & 3 points in Yamagata urban areas)	National Road 112: Teppomachi underground pedestrian crossing	Based on the New Yamagata Pref. Congestion Measures Program(draft)
Ratio of Death & Injury Accidents and Percentage of deaths	Death & injury accidents 75.8 cases/100 million vehicle - km yr(2001) (8,546 cases/yr)	Death & injury accidents Reduce to 74.3 cases/100 million vehicle - km (equivalent to about 8,380 cases/yr)	National Road 286: Widening of Teppomachi	Target is to reduce by 7.5 cases /100 million vehicle-km in 5 yrs(2007)
	Percentage of deaths 0.76person/100 million vehicle - km yr(2001) (86 persons/yr)	Percentage of deaths Reduce to 0.75person/100 million vehicle - km (equivalent to 85 persons/yr)		Coordinate with the target in Yamagata Pref. Traffic Safety Plan
Motorway's Share of Traffic	2.5% share (2001)	2.8% share	Akayu bypass(a section) 30% discount coupon tickets for expressways	Target indicator value set by taking the development of motorways and introduction of 30% discount coupon tickets for expressways into consideration
Ratio of Roads Designed for Winter Safety	10.0% (1999)	Aim for 11%	National Road 112: Kamozaaka bypass National Road 458: Hasedo bypass	Target indicator value set by taking the progress of the project into consideration
Ratio of Sections with Lower Driving Speed in Winter	39.0% (2002)	Aim for 38.0%	National Road 7: mikawa bypass Ordinary Prefectural Road: Higashinuma Naganuma Amarume route	

Main projects to be Implemented to Achieve Goals (Sections scheduled for FY2003)

•National Road 7 Mikawa bypass	•National Road 112 Tsuruoka district power lineutility tunnel	•Major Regional Road: Yamagata Kaminoyama route(Kaminoyama section)
•National Road 7 Modification of Oomiya intersection	•National Road 112 Hinode sidewalk	•Major Regional Road: Yonezawa Takahata route(Takei section)
•National Road 13 Elevation of Matsuoka intersection	•National Road 113 Akayu bypass (a section)	•Major Regional Road: Mogamikishu route(Mukomachi section)
•National Road 13 Modification of Wago intersection	•National Road 286 Widening at Teppomachi	•Ordinary Prefectural Road: Higashinuma Naganuma Amarume route(Aoyama section)
•National Road 112 Teppomachi underground pedestrian crossing	•National Road 345 Modification of Izumicho intersection	•Major Regional Road: Kandakawakuchi route(Mukai section)
•National Road 112 Kamozaaka bypass	•National Road 458 Hasedo bypass	•Urban Planning Road: Ishigakishioi route(Aioi section)

Setting up performance indicators for each region

22 prefectures have set up **nearly 160 indicators** (as of December 20, 2003)

(About half of the indicators **(80 indicators)** are original ones for the regions concerned and different from those in nationwide performance plans)

Examples of original regional indicators:

Ratio of sections where driving speed is reduced during winter	Performance Plan 2003 for roads in Yamagata Pref.
Ratio of snow removal in school zones during winter	Performance Plan 2003 for roads in Aomori Pref.
Ratio of population arriving at advanced medical facilities for new born babies in 60 minutes	Performance Plan 2003 for roads in Aomori Pref.
Ratio of safe areas for passing (automobiles and pedestrians)	Performance Plan 2003 for roads in Niigata Pref.
Time required between seven areas and the city center	Performance Plan 2003 for roads in Fukushima Pref.
Ratio of elimination of dangerous locations for disaster prevention.	Performance Plan 2003 for roads in Nagano Pref.
Time loss (amount) due to reduction of driving services during winter.	Performance Plan 2003 for roads in Akita Pref.
Percentage of sidewalks with sufficient room in city area.	Performance Plan 2003 for roads in Toyama Pref.
Ratio of secured Ishikawa excursions.	Performance Plan 2003 for roads in Ishikawa Pref.

Formulating Reports on Degree of Achievement for the Fiscal Year 2003 and Performance Plans for the Fiscal Year 2004 by Regions

Situation of formulating reports and plans

Already released. (As of July 28)

- June 30 National Version
- June 30 Aichi Prefecture
- July 15 Akita Prefecture
- July 23 Iwate Prefecture
- July 27 Aomori Prefecture

Each region is planning to formulate and release reports in the future at any time.

* For reference: 32 prefectures and one region have already released the Performance Plans for the fiscal year 2003.

Morioka Times
(July 25, 2004)

Congestion Loss reduced
by ¥6 Billion.

Iwate River and National Highway Work Office
estimates Effects of Upgraded Roads.

河川 道路改良効果を試算 渋滞損失60億円を削減

岩手河川・三陸国道より渋滞や事故の減少に及ぼした効果を評価した。

その結果、渋滞損失は年間192万時間、渋滞損失金額で60億円削減された。03年実績報告書「業績計画」を策定した。03年度から道路行政に成果主義のマネジメントを取り入れた。

度々の目標を渋滞損失時間100万時間、渋滞損失金額を60億円と設定していたため、それぞれ100%、200%の達成率となった。主要渋滞ポイントは5カ所の緩和目標を達成。交通事故率と死者率は県平均事故率以上の延長を6%削減する

目標を達成し、それぞれ100%だった。安心走行ゆきみち率は冬季の安全走行可能な道路延長6%増加の目標に対して4.7%で達成度78%、道路通行安心率は、災害等で通行する際に不安な箇所を5%削減する目標に対して11カ所にとどまり、達成率61%だった。

主要渋滞ポイントの解消は盛岡市の盛岡西バイパスの改良などで、予想以上の効果が

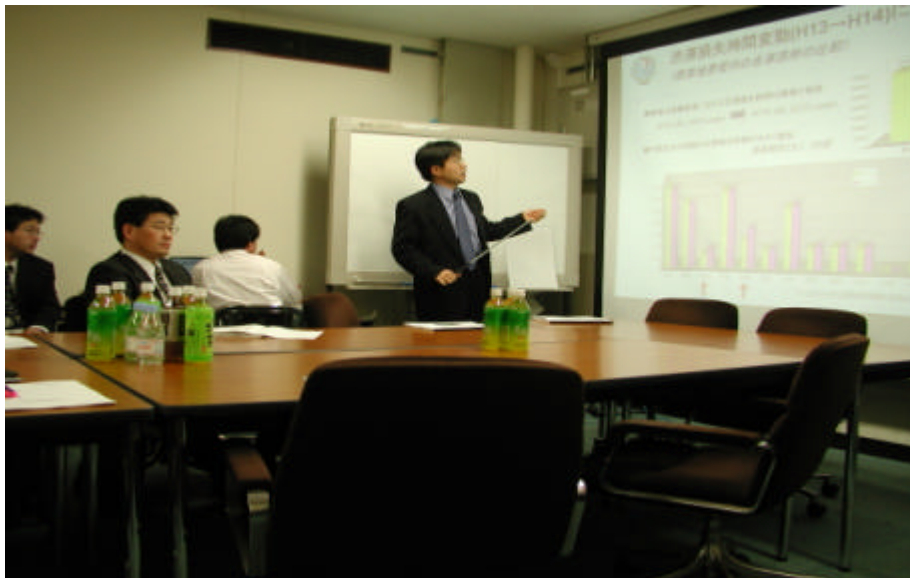
上がった渋滞損失時間と渋滞損失金額の達成度が目標の倍に跳ね上がったという。

岩手河川国道事務所は「達成率によって予算に反映されるようになってきているし、成果主義で頑張っているところには予算が付く。ただ初めての取り組みで目標設定などが確立できていないこともあり、達成度をより実感のあるものにしていく」と話す。

Regional Road Management Workshop

Regional Road Management Workshop is :

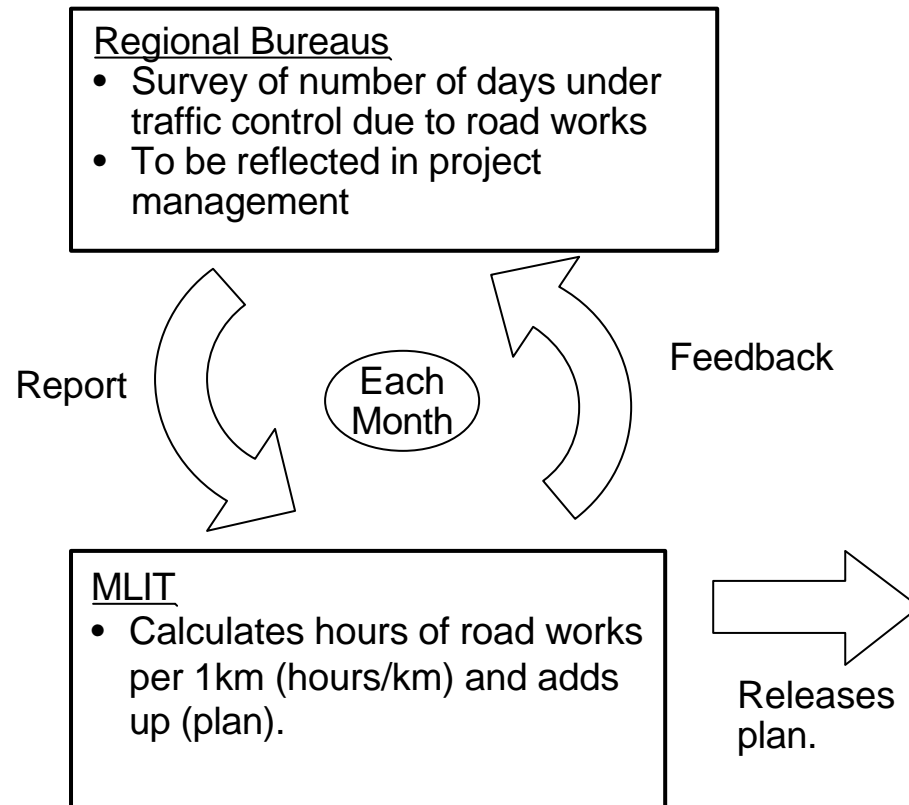
- **Annual workshop between planning division and regional road bureau (10 in total)**
- **Discuss strategies of road management in each region.**
- **Held in Feb. 2004 (the first time) : will be held in each Feb. and Jun.**



Presentations from next page are examples of discussion in this workshop. (These data are not for disclosure basically.)

Data-based Administrative Management (Taking road works in (3) as an example)

Flow of Administrative Management



Points of Measures

By providing information thoroughly, give incentive for reduction to road administrators and specified companies.
 Index inquiry numbers to simplify specifying and searching information on road works.
 Add up and release immediately road work hours on directly controlled national highways.

Hours of road works (hours/km/annum)

Name of Bureau	2002	Target for 2003 (2002*0.96)	2003	Reduction rate (2003/2002)
Hokkaido	116	111	104	0.90
Tohoku	166	159	140	0.84
Kanto	431	414	433	1.00
Hokuriku	191	183	178	0.93
Chubu	188	180	180	0.96
Kinki	241	231	228	0.95
Chugoku	215	206	207	0.96
Shikoku	185	178	151	0.82
Kyushu	199	191	173	0.87
Okinawa	381	366	333	0.87
Nationwide (directly controlled)	201	193	186	0.93

Obtaining Data in an Efficient Way

Policy of improving the way to obtain indicator data in the Report on Degree of Achievement for FY2003 and the Performance Plan for FY2004

	Applications to daily management	Status Quo		Improvements	
		Adding up data Frequency (time)	Time for adding up	Adding up data Frequency (time)	Time for adding up
1. Time loss due to traffic congestion (congestion monitoring zones)	○	Every month (end of the month). Data on traffic. Each fiscal year (March). (Congestion loss: monitoring zones)	One month later. Three months later.	Each month (end of the month) Congestion data (traffic counter data). *In the future part of probe data will be added promptly	
3. Hours of road work	○	Each fiscal year (March)	Three months later	Each month (end of the month)	One month later.
2. Ratio of ETC usage	○	Each month (end of the month)	One week later		
4. Ratio of high standard road usage (Targeted traffic that will be newly switched over to expressways during the current fiscal year)		Each fiscal year (March)	Three months later		
5. Ratio of roads with access to hub airports and ports		Each fiscal year (March)	One month later		
6. Ratio of main cities in neighboring regions that are connected to each other by an upgraded national road		Each fiscal year (March)	One month later		
7. % of people who are able to have a safe and pleasant drive into the city, the center of daily life, in under 30 min		Each fiscal year (March)	Three months later		
12. Percentage of cities that have rescue routes covering a wide area in the event of disasters		Each fiscal year (March)	Three months later		
11. Road structure maintenance ratio		Each fiscal year (March)	Three months later		
14. Ratio of NO2 environmental goal achievement	○	Each month (end of the month)	One week later		
14. Ratio of SPM environmental goal achievement	○	Each fiscal year (October-November)	End of the fiscal year of survey		
15. Achievement rate of required limits on nighttime noise					
13. Reduction of CO2 emission					
10. Ratio of death and injury due to road accidents	○	Each month (end of the month)	One month later		
8. % of barrier-free main roads in the vicinity of passenger facilities with a daily user volume of more than 5,000		Each fiscal year (March)	Three months		
9. Percentage of trunk roads in urban areas without utility poles		Each fiscal year (March)	Three months		
16. Level of road user satisfaction		Each fiscal year (June)	Three months later		
17. Number of hits on homepage	○	Each month. (Road Bureau). (End of the month) Each quarter. (Regional Bureaus). (End of the quarter)	One month later	Each month (Road Bureau). Each month (regional bureaus)	One month later

7. Linking Outcome with Budget (introduction of performance based budget)

【Objective】 Significance of Outcome-Based Public Management of Road Administration

Improving road administrative efficiency = spreading “outcome-based” philosophy to all departments reforming awareness of administrative employees
 Improving road administrative transparency = Disclosing cost on “outcome” rebuilding the trust between public and administration

【Method】

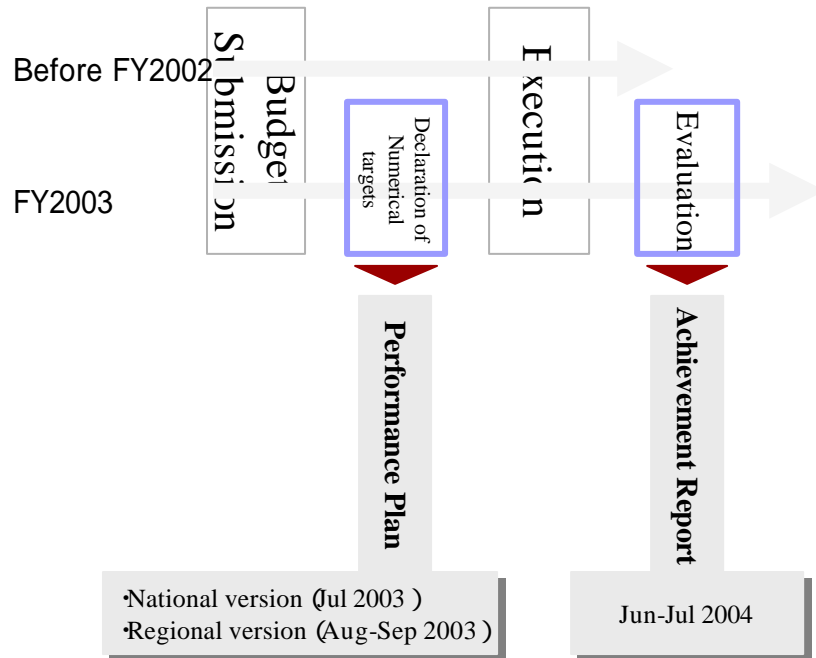
Construct “Cycle of Management” in which numerical targets are set every year, and the evaluation results are reflected

Discretionary powers are given to the field office in exchange for strict evaluation of outcome

【Tasks for FY2003】

1st Stage

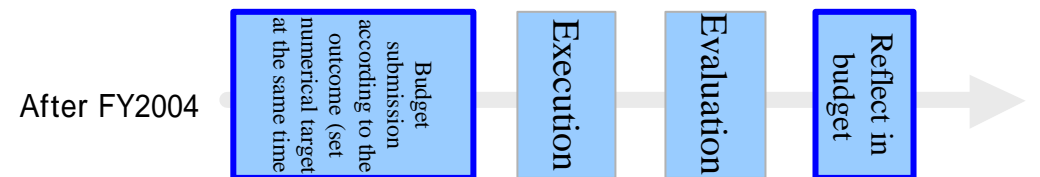
Specify the numerical targets for road administration
 start “outcome-based” public management



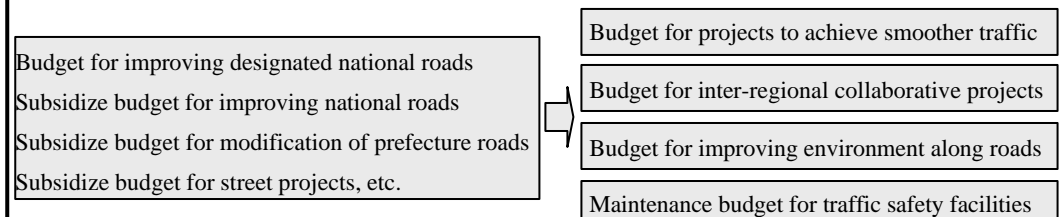
【Tasks for FY2004】

2nd Stage

Link the “Outcome” to the budget system and spending to advance “outcome-based” to the 2nd stage
 Introduction of “Outcome-purchasing type on budget operation”
 (specify the outcome target at the submissions stage)



Shifting from “Budgeting by road type” to “Budgeting by performance” (concept image)



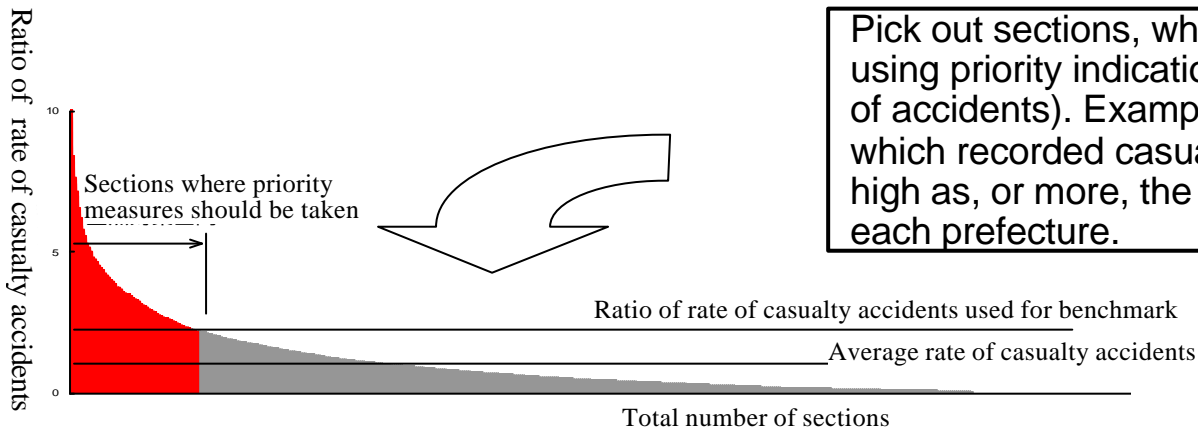
Etc. 1
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Outline of budgets considered performance targets

Items	Requested amount for 2004 (Project cost)		Budget amount for 2003 (Project cost)		Ratio (A)/(B)
	(A)	Target amount for 2004	(B)	Estimated amount for 2003	
Project cost for smooth transportation	¥847.7 billion		¥758.1 billion		1.12
Time loss due to congestion		580 million man hr/yr		590 million man hr/yr	
Project cost for regional alliance support	¥2,033.1 billion		¥1940.1 billion		1.05
Ratio of high standard road usage		13% (New switchover to 2.9 million unit kilo/day)		13% (New switchover to 2.1 million unit kilo/day)	
Ratio of main cities in neighboring regions that are connected to each other by an upgraded national road		74%		73%	
Percentage of people able to have a safe and pleasant drive into the city, the center of daily life, in under 30 minutes		65%		64%	
Maintenance and repair project cost	¥279.2 billion		¥276.3 billion		1.01
Percentage of cities that have rescue routes covering a wide area in the event of disasters		69%		68%	
Road structure maintenance ratio		88%		87%	
bridge					
pavement		maintain current level		91%	
Project cost for promotion of transportation alliance	¥750.7 billion		¥648.8 billion		1.16
Ratio of roads with access to hub airports and ports		61% (access to 41 places)		61% (access to 40 places)	
Project cost for improving roadside environment	¥126.4 billion		¥106.5 billion		1.19
Ratio of NO ₂ environmental goal achievement		70%		67%	
Ratio of SPM environmental goal achievement		about 20%		about 10%	
Achievement rate of required limits on nighttime noise		65%		63%	
Project cost for improving transportation safety facilities	¥520.4 billion		¥420.1 billion		1.21
Ratio of death and injury due to road accidents		114 incidents/100 million vehicle-km		116 incidents/100 million vehicle-km	
Percentage of main roads in the vicinity of passenger facilities with an average daily user volume of more than 5,000		27%		21%	
Project cost for improving cable utility conduits	¥265.1 billion		¥222.8 billion		1.19
Percentage of trunk roads in urban area without telephone poles		10%		8%	

Data-based Administrative Decision (Taking traffic safety in (1) as an example)

Basic View



Pick out sections, which have lots of problems, using priority indication system (curve of rate of accidents). Example: Pick out sections which recorded casualty accidents twice as high as, or more, the percentage average for each prefecture.

Example 1: Study using other indicators such as fatality rate

Measures to cope with local circumstances

Example 2: In snowy areas, study accident rate during winter

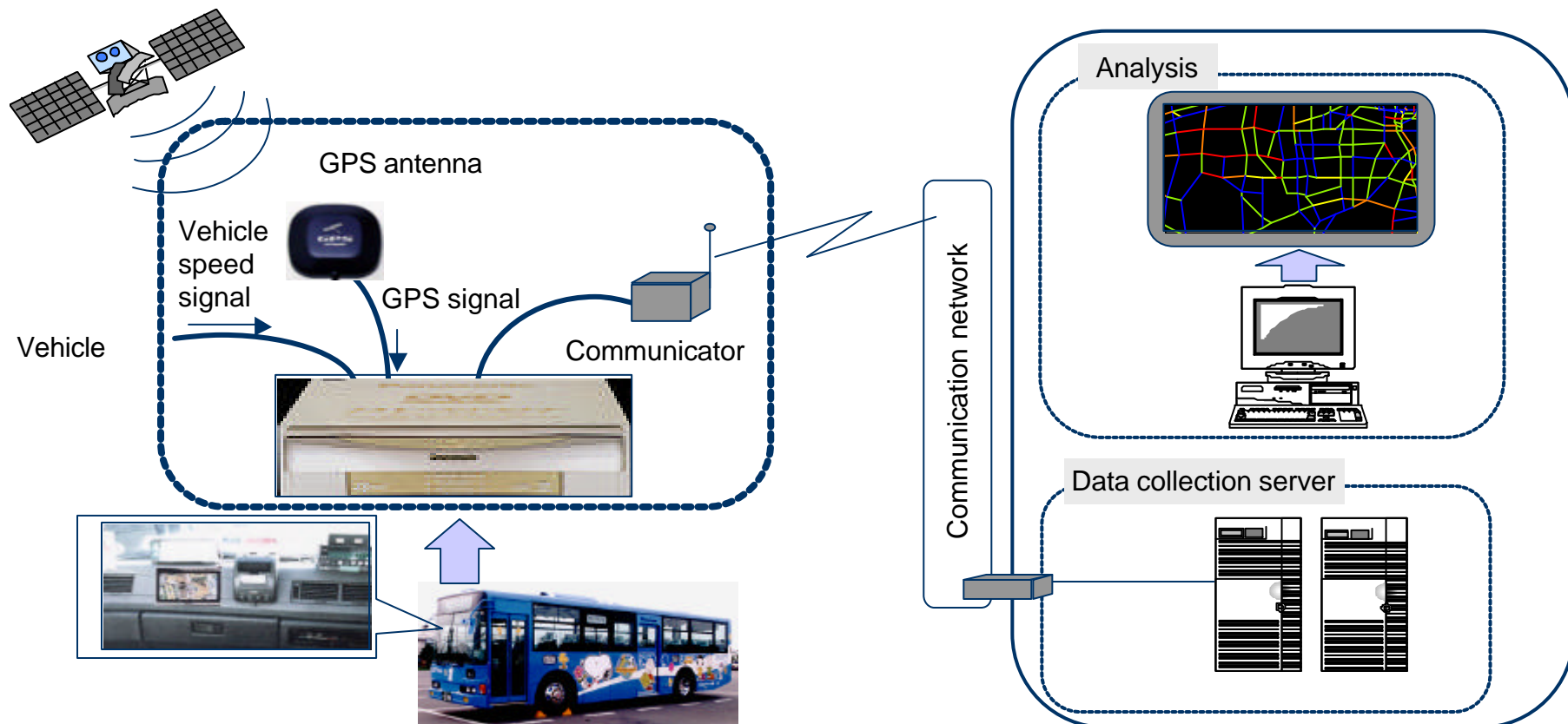
Plan and implement measures against accidents

Study comprehensively regional circumstances and modes of accidents that occurred in the sections picked out and plan and implement specific measures to be carried out in the said sections.

Priority indication system (curve of rate of accidents)
To further projects efficiently and effectively, classify crossings and single roads where the form of accidents that occur differ. After that, divide them into a fixed section and arrange them in the order of high rate of fatal accidents. The system indicates places where priority measures should be taken.

<Reference> Outline of "Probe Car Survey"

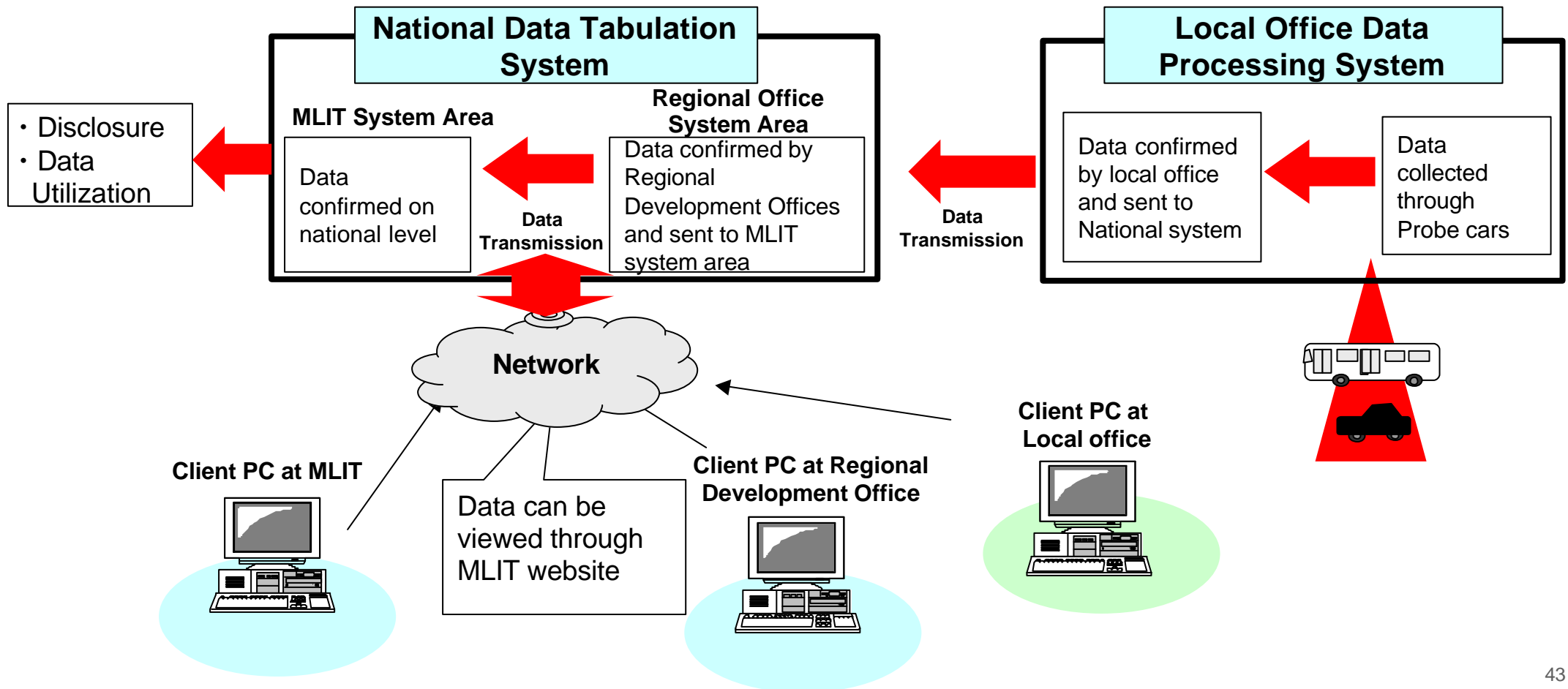
- Real-time collection of running speed data by route
- Summation of daily real-time data by weekday/weekend, type of car, direction, etc. allows calculation of the outcome indicators and application to project evaluation.



Data Tabulation System

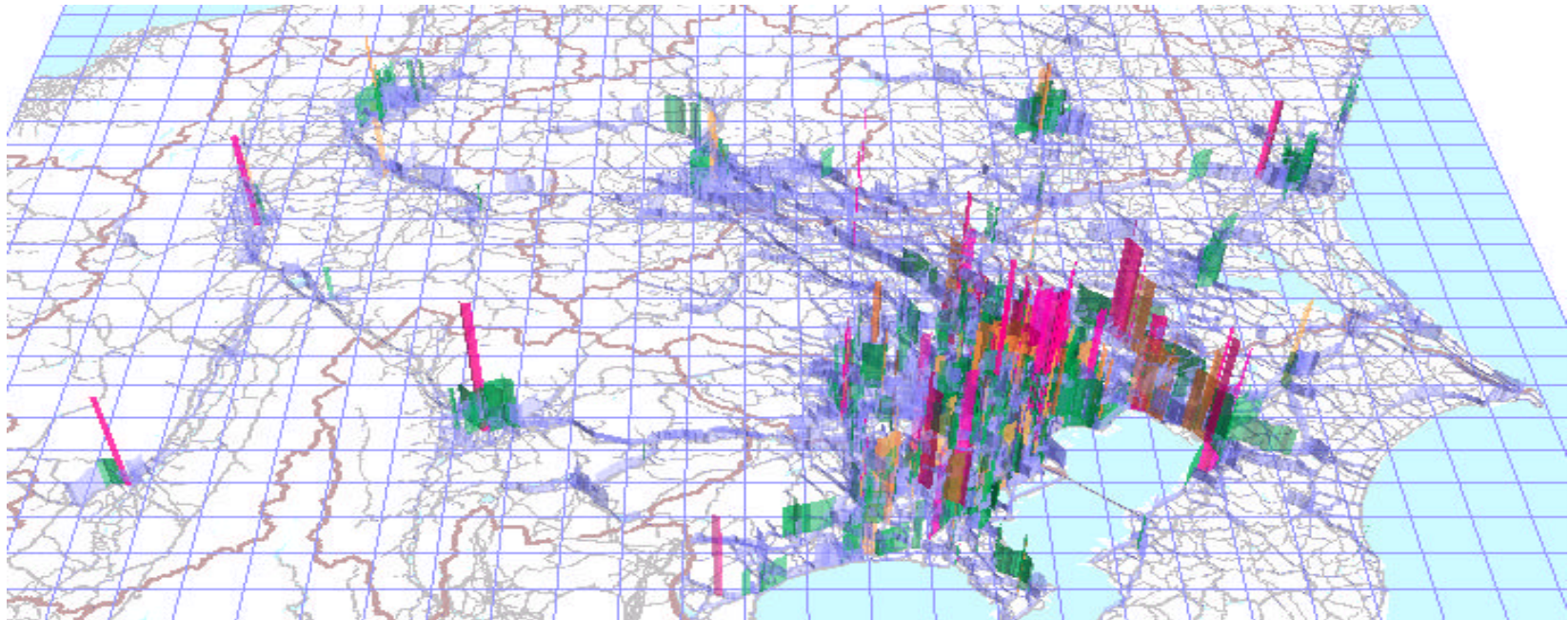
- Probe Information System consists of “National Data Tabulation System” and “Local Office Data Processing System,” which are connected with high speed optical network.
- Calculation results of the total loss due to congestion can be viewed through the MLIT* website.

*MLIT: Ministry of Land, Infrastructure, and Transport



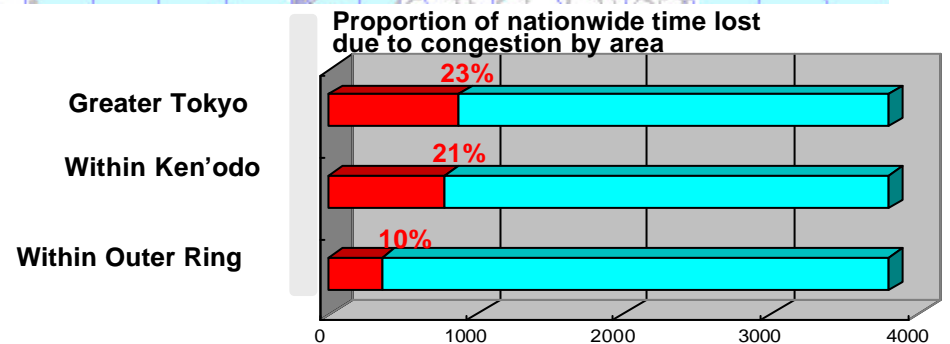
Example of finding trouble spots by means of congestion loss data (Kanto area)

- Time lost due to congestion by area (Nationwide 3.81 billion person-hours, Kanto 1.239 billion person-hours)

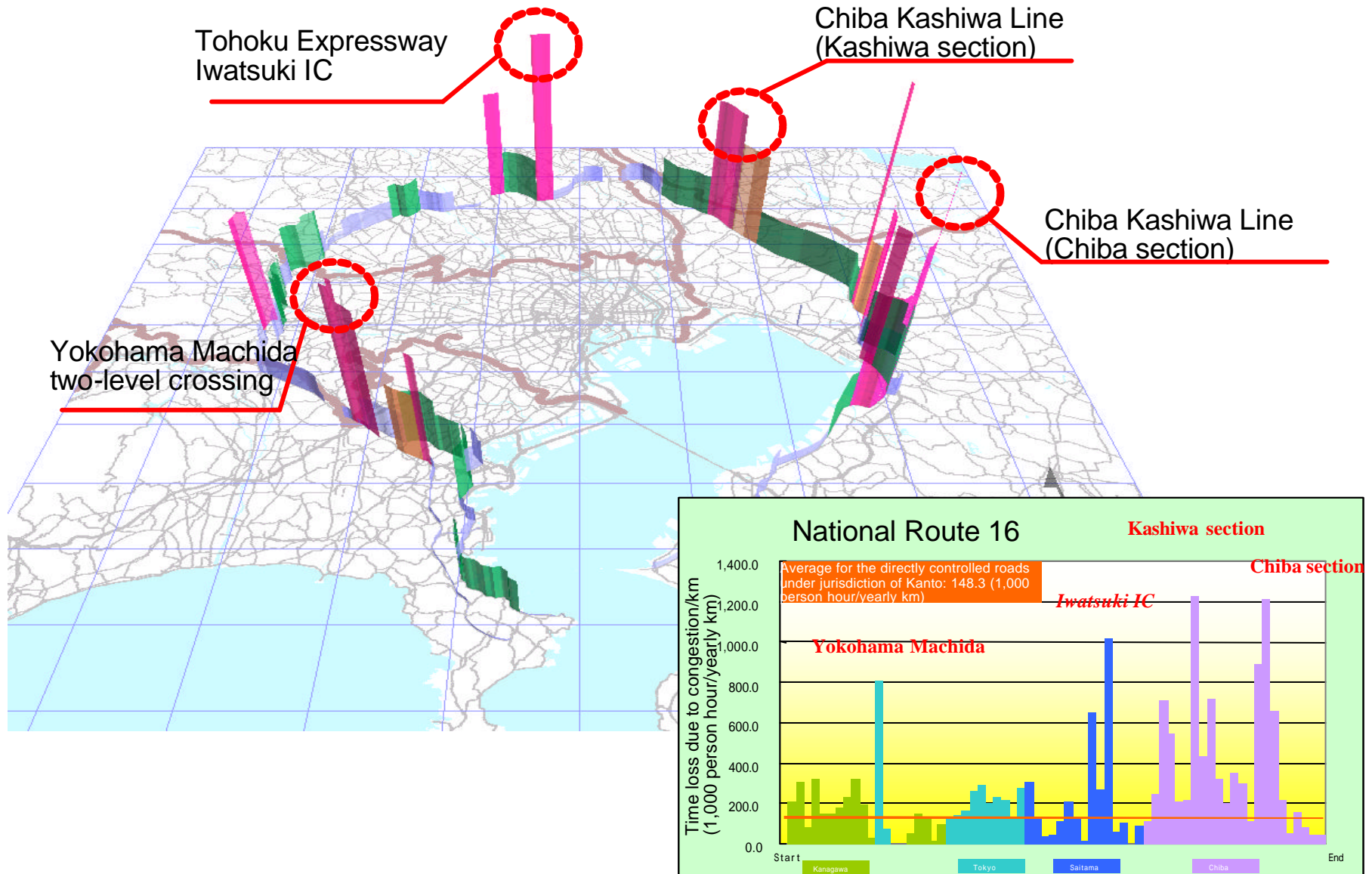


• Time lost due to congestion (million person-hours)

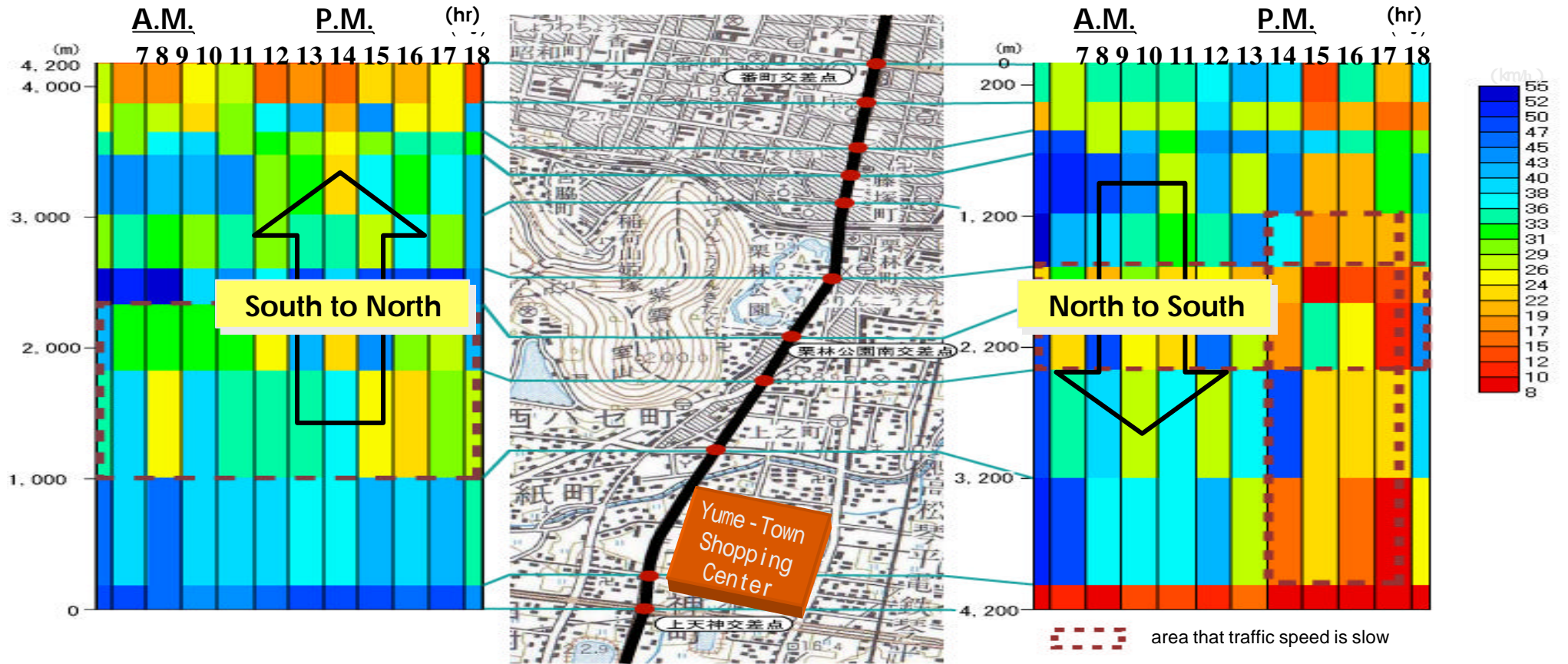
Greater Tokyo (Metropolis + 3 Prefectures)	881
Within Ken'odo Road	793
Within Outer Ring Road	355



An example of finding trouble spots by means of congestion loss data (Kanto, National Route 16)

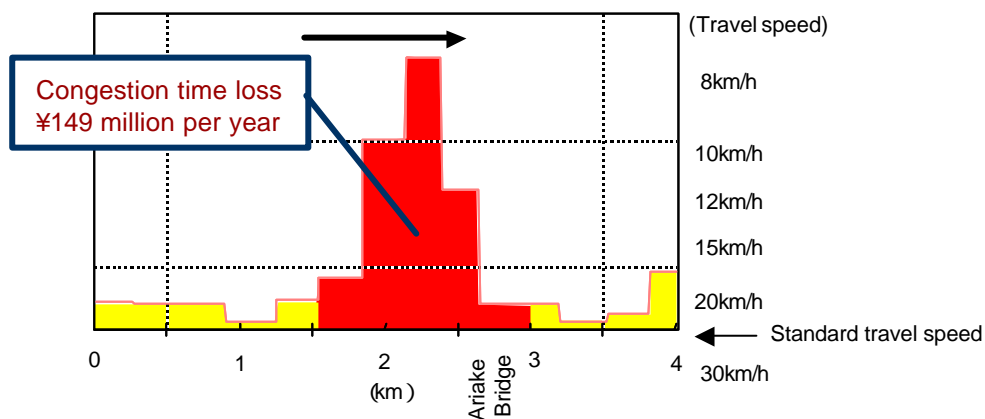


Detailed analysis of individual leg (Traffic speed on time-space diagram)

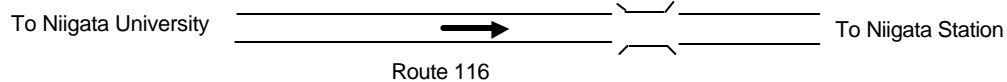
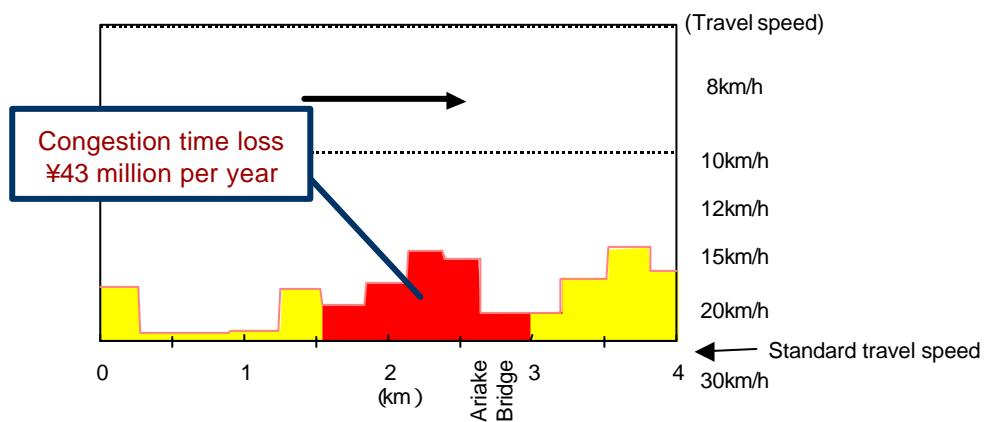


Diffusion of Management in the Execution Process - Analysis of the Effects of a Project Using Congestion Data -

● Before the project



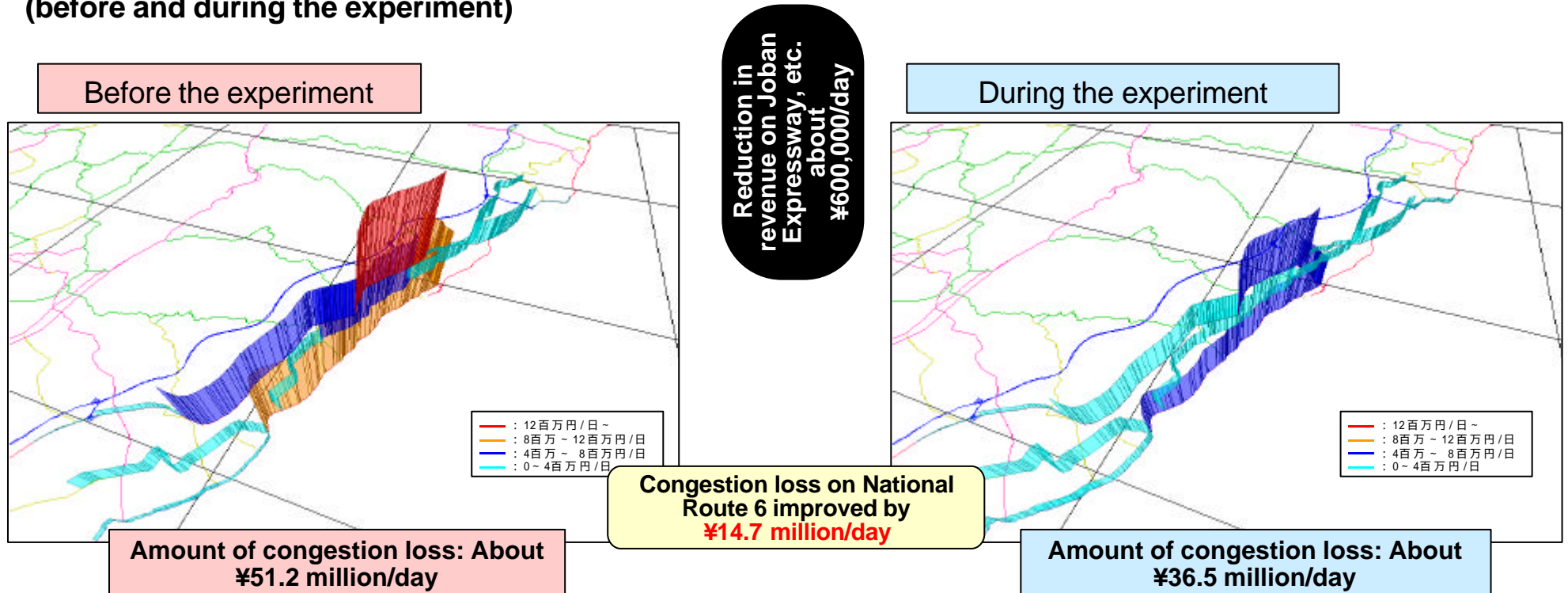
● After the project



* Source: post-evaluation of the improvement work of an intersection on Ariake Bridge, Niigata City (opened to traffic in 2001)

Understanding the effect of a toll road discount experiment

Change in amounts of congestion loss (before and during the experiment)

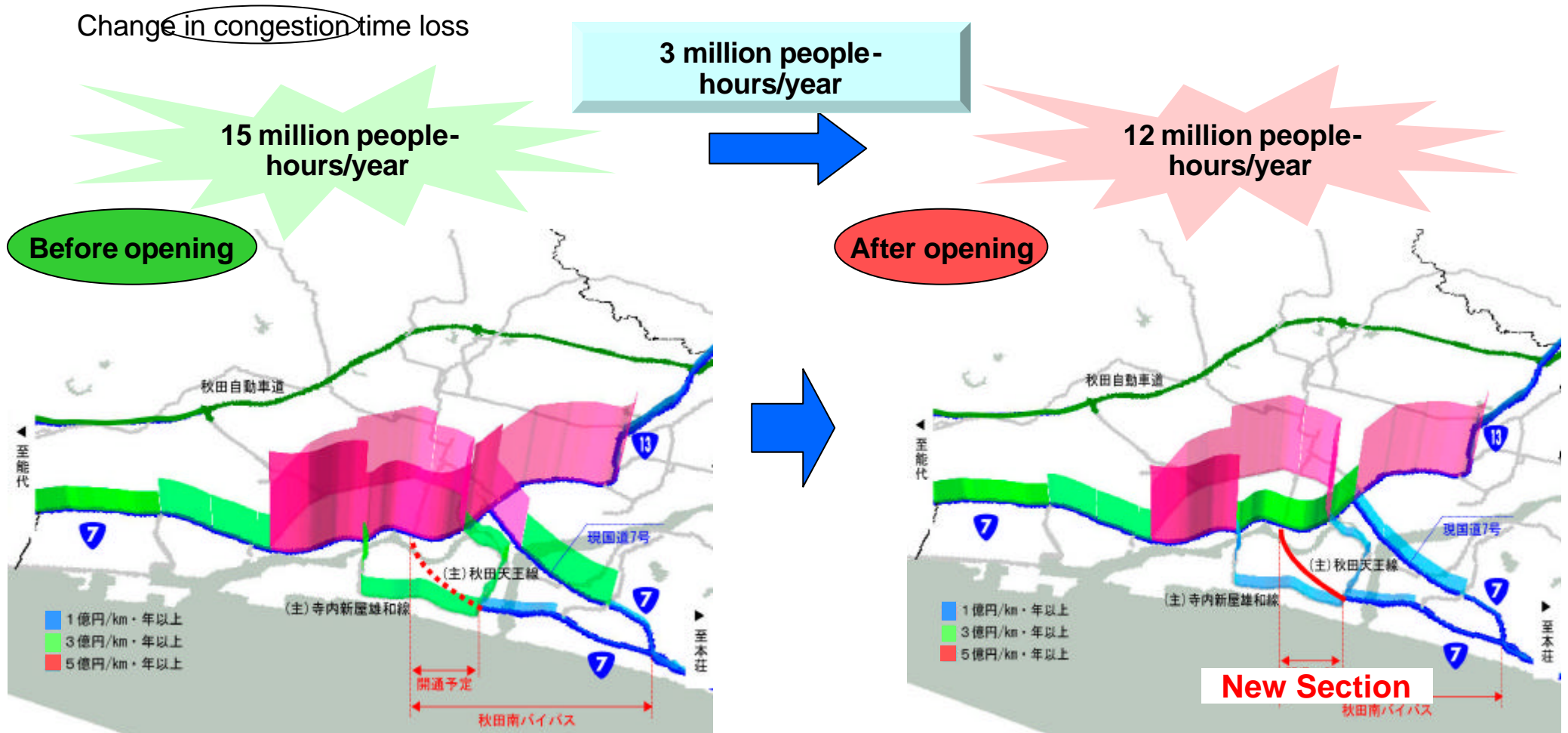


- 常磐道等の減収額は約60万円/日
{減収額 = (実験前の車種区分毎イターペ7台数 × 通常料金) - (実験中の車種区分毎イターペ7台数 × 実験料金)}
- 国道6号等の渋滞損失額は1,470万円/日 改善
常磐道等の減収を大幅に上回る一般道路の渋滞緩和効果

Before the experiment: Wednesday, October 29, 2003

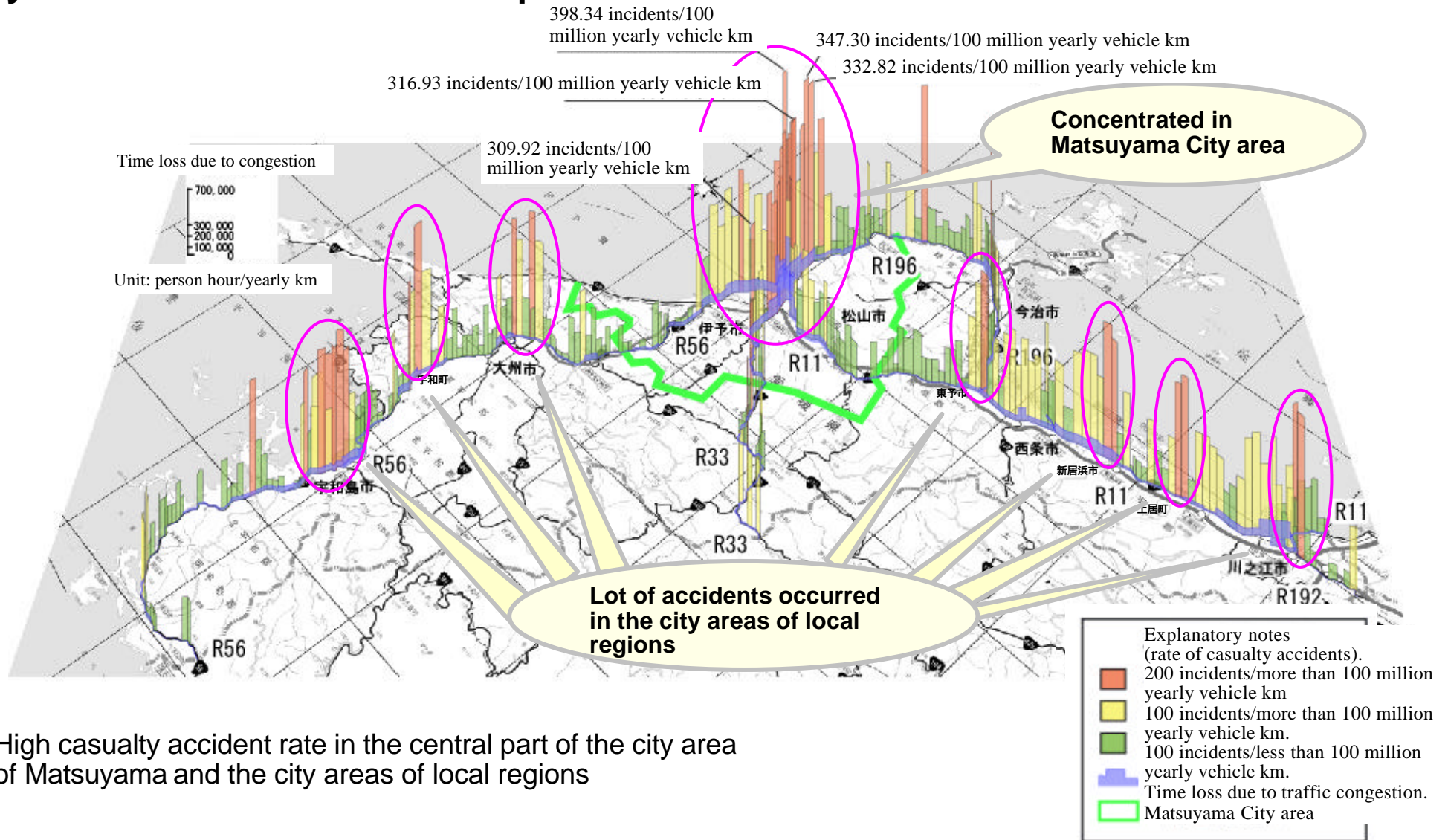
After the experiment: average of Wednesday, November 19 and December 3, 2003

Analysis of the effect of an individual project in which data were used (e.g. Tohoku)



Analysis of Status Quo with 3D Map

From Ehime Prefecture Version of Performance Plan



High casualty accident rate in the central part of the city area of Matsuyama and the city areas of local regions