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)
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

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

#### Putting cycle of management into practice in fiscal year 2004

<table>
<thead>
<tr>
<th>Month</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>April 2004</td>
<td>Linking budget to outcome (introduction of type of budget based on purchase of outcome).</td>
</tr>
</tbody>
</table>
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

【政策制定阶段】
“Outcome-based Road Policy Management”

【项目评价阶段】
“Comprehensive Evaluation”
(incl. simple Cost/Benefit Evaluation)

【项目规划阶段】
“Road Planning Scheme based on Comprehensive Assessment and Public Involvement”
(a kind of “Strategic Environmental Assessment”: SEA)

【现场管理阶段】
“Road Performance Management” (Road Management Scheme based on Collaboration with Users)”
2. Establishment of The Performance Management Office

Organization of the Road Bureau

- Director General
- Deputy Director General
- General Affairs Division
- Road Administration Division
- Road Traffic Control Division
- Planning Division
- National Expressway Division
- National Highway Division
- Regional Road and Environment Division
- Toll Road Division
- Road Fund Planning Office
- Supervision Office of Japan Highway Public Corporation and Honshu-Shikoku Bridge Authority
- Road Use Coordination Office
- ITS Policy and Program Office
- Economic Research, Traffic Survey and Census Office
- Performance Management Office
- Road Disaster Prevention Countermeasure Office
- Regional Road Coordination Office
- Road Environment Planning Office

Establishment of The Performance Management Office
(April 1, 2003)
3. Advisory Committee for Public Management of Road Administration

Management shifting from "theory" to "practice"

- 3 keys for outcome-based road administration
  - Annual cycle of management
  - Clarity and feasibility
  - Partnership with citizens

- 5 main strategies for implementation
  - Establish Policy Goals with Indicators
  - Collect Data Effectively
  - Make Performance Plan and Achievement Report
  - Reflect in Budgets and Personnel Affairs
  - Secure Accountability

- 3. Advisory Committee for Public Management of Road Administration

- Improvement of Administrative Efficiency
  - Administrative management system
  - Measuring achievement of implementation
  - Achievement Report
  - Outcome-based implementation of measures and projects
  - Reflect in budgets and personnel affairs

- Improvement of Administrative Transparency

- Policy evaluation system
- Policy assessment (Setting goals, etc.)
- Post-evaluation (Measuring achievement, etc.)
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

USA
- DOT
  - U.S. DOT Strategic Plan
- FHWA
  - FHWA Strategic Plan

UK
- DFT
  - Transport 2010 The 10 year Plan
- HA
  - Strategic Roads 2010

Japan
- The MLIT
  - Key Plan for Infrastructure Development
- Road Bureau
  - Key Plan for Infrastructure Development

Planning level
- Performance plan
- Business plan
- Performance report
- Annual report

Execution level
- Implementation of measures and projects
  - Performance plan
    - Annual numerical targets
    - Validity of measures and projects
  - Business plan
  - Annual report
  - Achievement report
    - Performance of numerical targets
    - Analysis of causes
### 表1: 各政策テーマの評価指標

<table>
<thead>
<tr>
<th>ポリシーテーマ</th>
<th>評価指標</th>
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</thead>
<tbody>
<tr>
<td>安全性</td>
<td>道路利用者の満足度、救命救急地域の調整</td>
</tr>
<tr>
<td>生活力</td>
<td>県内の主要都市間の連携の強化</td>
</tr>
<tr>
<td>環境性</td>
<td>障害者の利便性を向上させる道路の比率</td>
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<td>ホームページのアクセス数</td>
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<tr>
<td></td>
<td>空気污染の環境目標の達成率</td>
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<td>夜間の騒音規制の達成度</td>
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<td>路面の維持管理比率</td>
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<tr>
<td></td>
<td>トリプルリンク枠における救急ルートの設置比率</td>
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<td>新規空港や港へのアクセス比率</td>
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<tr>
<td></td>
<td>路面の維持管理比率</td>
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<tr>
<td></td>
<td>高品質道路の使用比率</td>
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<td></td>
<td>適応実態調査による時間損失の減少</td>
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<td></td>
<td>窓の交換や他の施設の更新</td>
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# 5. Overview of the "Key Plan for Infrastructure Development"

## Key Plan for Infrastructure Development Law

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

<table>
<thead>
<tr>
<th>Plans for 9 projects of different genres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads</td>
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<tr>
<td>Traffic safety facilities</td>
</tr>
<tr>
<td>Airports</td>
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<tr>
<td>Ports and harbors</td>
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<tr>
<td>Urban parks</td>
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<tr>
<td>Sewerage</td>
</tr>
<tr>
<td>Flood control</td>
</tr>
<tr>
<td>Steeply sloping ground</td>
</tr>
<tr>
<td>Coasts</td>
</tr>
</tbody>
</table>

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

- **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.

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### 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)
Priority Targets and Indicators in Key Plan for Infrastructure Development

1. Formation of a barrier-free society to cope with declining birthrate and aging society
2. Formation of beautiful urban life space full of water and greenery
3. Formation of good residential environments
4. Building a strong nation against large-scale earthquakes and fires
5. Strengthening overall traffic safety measures and crisis control
6. Improving living environments related to urban air pollution and noise
7. Securing transportation services of an international level and improving international competitiveness and attractiveness
8. Improving comfort and convenience of urban transportation
9. Activation of regions and economy through regional and tourism exchanges
10. Realization of an affluent life through full life space
11. Living realization of an affluent life through full life space
12. Safety promotion of improved disaster prevention and strengthening traffic safety measures and crisis control
13. Environment preservation and creation of environments from a global basis to close-to-home basis
14. Vitality formation of an attractive and active economic society by the strengthening of international competitiveness, the regeneration of cities, regional alliances and the promotion of international economic and cultural activities

Indicators are shown in Chapter 2 "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."

- Percentage of main roads in the vicinity of passenger facilities with an arrearage daily user volume of more than 5,000 road
- About 50% (FY2007)
- Area of secured public space with water and greenery in cities-an increase of about 10% (12m²/person in 2002 → 13m²/person in 2007)
- Percentage of trunk roads in urban area without telephone poles (FY2002: 15% → FY2007: 25%)
- Percentage of main cities in neighboring regions that are connected to same
- Percentage of trunk roads in urban area without telephone poles (FY2002: 15% → FY2007: 25%)
- Ratio of road work (FY2002: 235 hr/km, FY2007: about 20% reduction)
- Ratio of hours of road work (FY2002: 235 hr/km, FY2007: about 20% reduction)
- Ratio of roads with access to hub airports and ports (FY2002: 59%, FY2007: 68%)
- Time loss due to congestion in urban area (FY2002: 3,810 million man hr, FY2007: about 10% reduction)
- Hours of road work (FY2002: 235 hr/km, FY2007: about 20% reduction)
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)

<table>
<thead>
<tr>
<th>Time loss due to traffic congestion (congestion monitoring zones)</th>
<th>Project cost for smooth transportation (¥73.91 billion in 2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base Results 2002</strong></td>
<td><strong>Targets for 2003</strong></td>
</tr>
<tr>
<td>610 million person-hour/annum</td>
<td>About 590 million person-hour/annum (reduction of about 3%)</td>
</tr>
<tr>
<td>201 hours/km/annum (reduction of about 4%)</td>
<td>193 hours/km/annum (reduction of about 7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours of road work</th>
<th>Nationwide</th>
<th>Metropolitan Expressway</th>
<th>Hanshin Expressway</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Targets for Each Policy Theme and Degree of Achievement (1/4)</strong></td>
<td><strong>Base Results 2002</strong></td>
<td><strong>Targets for 2003</strong></td>
<td><strong>Current Results for 2003</strong></td>
</tr>
<tr>
<td>Ratio of ETC usage</td>
<td>5%</td>
<td>About 15%</td>
<td>16%</td>
</tr>
<tr>
<td>Nationwide</td>
<td>6%</td>
<td>About 20%</td>
<td>19%</td>
</tr>
<tr>
<td>Metropolitan Expressway</td>
<td>3%</td>
<td>About 15%</td>
<td>11%</td>
</tr>
<tr>
<td>Hanshin Expressway</td>
<td></td>
<td></td>
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<tr>
<td>Linking regions ~ Cooperation among regions ~</td>
<td>Project cost for regional alliance support (¥2,084.3 billion in 2004)</td>
<td></td>
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</tr>
<tr>
<td>---------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
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</tr>
<tr>
<td><strong>Ratio of high standard road usage</strong> (Targeted traffic that will be newly switched over to expressways during the current fiscal year)</td>
<td>Base Results 2002</td>
<td>Targets for 2003</td>
<td>Current Results for 2003</td>
</tr>
<tr>
<td>13%</td>
<td>13% (increase of 2.1 million unit km)</td>
<td>13% (reduction of 200,000 unit km)</td>
<td>13% (2.9 million unit km)</td>
</tr>
<tr>
<td><strong>Ratio of roads with access to hub airports and ports</strong></td>
<td>59%</td>
<td>61% (access to Aomori port)</td>
<td>61% (access to Central Japan International Airport)</td>
</tr>
<tr>
<td><strong>Ratio of main cities in neighboring regions that are connected to each other by an upgraded national road</strong></td>
<td>72%</td>
<td>73%</td>
<td>73%</td>
</tr>
<tr>
<td><strong>% of people who are able to have a safe and pleasant drive into the city, the center of daily life, in under 30 min</strong></td>
<td>63%</td>
<td>About 64% (increase of about 800,000 people)</td>
<td>About 64% (increase of about 600,000 people)</td>
</tr>
</tbody>
</table>
## Targets for Each Policy Theme and Degree of Achievement (3/4)

### Protecting Roads~ Road Maintenance and Administration~

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<tbody>
<tr>
<td>Road structure maintenance ratio</td>
<td>Bridges</td>
<td>86%</td>
<td>About 87%</td>
<td>87%</td>
<td>89%</td>
</tr>
<tr>
<td></td>
<td>Pavement</td>
<td>91%</td>
<td>Maintain current level</td>
<td>93%</td>
<td>Maintain current level</td>
</tr>
<tr>
<td>Percentage of cities that have rescue routes covering a wide area in the event of disasters</td>
<td></td>
<td>66%</td>
<td>68%</td>
<td>68%</td>
<td>70%</td>
</tr>
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</table>

### Improving the Environment~ Preservation of environment~

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</thead>
<tbody>
<tr>
<td>Ratio of NO₂ environmental goal achievement</td>
<td></td>
<td>64%</td>
<td>About 67%</td>
<td>67% (new indicator: maintain current level)</td>
<td>- (new indicator about 90%)</td>
</tr>
<tr>
<td>Ratio of SPM environmental goal achievement</td>
<td></td>
<td>-</td>
<td>About 10%</td>
<td>9% (new indicator: maintain current level)</td>
<td>- (new indicator: maintain current level)</td>
</tr>
<tr>
<td>Achievement rate of required limits on nighttime noise</td>
<td></td>
<td>61%</td>
<td>About 63%</td>
<td>64%</td>
<td>65%</td>
</tr>
<tr>
<td>Reduction of CO₂ emission</td>
<td></td>
<td>261 million tons CO₂</td>
<td>Reduce CO₂ emission in the transportation sector to about 250 million tons by the year 2010</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>
### 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

<table>
<thead>
<tr>
<th>Project cost for improving transportation safety facilities (¥450.7 billion in 2004)</th>
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<tbody>
<tr>
<td>Ratio of death and injury due to road accidents</td>
</tr>
<tr>
<td>% of barrier-free main roads in the vicinity of passenger facilities with a daily user volume of more than 5,000</td>
</tr>
<tr>
<td>Percentage of trunk roads in urban areas without utility poles</td>
</tr>
<tr>
<td>Level of road user satisfaction</td>
</tr>
<tr>
<td>Number of hits on homepage</td>
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<tr>
<td>118.4 incidents/100 million vehicle km</td>
<td>About 116 incidents/100 million vehicle km (reduction of about 2%)</td>
<td>119.9 incidents/100 million vehicle km (increase of about 1.3%)</td>
<td>About 114 incidents/100 million vehicle km</td>
<td>About 108 incidents/100 million vehicle km (reduction of about 10%)</td>
</tr>
<tr>
<td>About 17%</td>
<td>About 21%</td>
<td>About 25%</td>
<td>About 30%</td>
<td>About 50%</td>
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<tr>
<td>Project cost for improving cable utility conduits (¥228.7 billion)</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Percentage of trunk roads in urban areas without utility poles</td>
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<tr>
<td>About 7%</td>
<td>About 8%</td>
<td>About 9%</td>
<td>About 10%</td>
<td>About 15%</td>
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<td>Level of road user satisfaction</td>
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<tbody>
<tr>
<td>2.6 points</td>
<td>About 2.7 points</td>
<td>2.6 points</td>
<td>About 2.8 points</td>
<td>3.0 points</td>
</tr>
<tr>
<td>15.46 million access/annum</td>
<td>About 26 million access/annum</td>
<td>23.50 million access/annum</td>
<td>About 43 million access/annum</td>
<td>About 100 million access/annum</td>
</tr>
</tbody>
</table>
Issues for outcome-oriented road administration
-- departure from the idea that plans with indicators automatically make administration "outcome-oriented"

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).

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.

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.

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 first step: measurement
The second step: diagnosis
The third step: decision
The forth step: communication
Outcome-based road administration management will make a round

Before that

After 2004

< Cycle of Management >

### 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.

Evaluate degree of achievement and put into practice cycle of management that makes most of that in subsequent cases.
Establishment of a Management Cycle
Establishing an Administration Process That Prioritizes the Outcome - Taking Fiscal Year 2003 As an Example -

- Setting of target values
- Implementation
- Post-evaluation

2002

2003

2004

2005

2003 Performance Plan
July 2003

Budget request for 2003
August

Budgetary decision for 2003
March

Budget request for 2004
August

2003 Performance Plan
July 2004

2003 Achievement Report
June 2004

2003 Achievement Report
June 2004

2003 Performance Plan
July 2004

2003 Performance Plan
July 2003

2003 Performance Plan
July 2003

2003 Performance Plan
July 2003

2003 Performance Plan
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2003 Performance Plan
July 2003

2003 Performance Plan
July 2003

2003 Performance Plan
July 2003
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.

(1) Confirm the effects of setting flexible tolls
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.)

(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 route. Increase averaged about 30%.

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.

Before the experiment

Amount of loss due to congestion:
- ¥12 million/day
- ¥8 - ¥12 million/day
- ¥4 - ¥8 million/day
- 0 - ¥4 million/day

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

Traffic increased over the entire route following the opening of the Takamatsu Expressway

Traffic (vehicle/day)

- Sakaide JCT ~ Takamatsu West IC
- Takamatsu West IC ~ Takamatsu Danshi IC
- Takamatsu Danshi IC ~ Takamatsu Central IC
- Takamatsu Central IC ~ Takamatsu East IC
- Sanuki Miki IC ~ Shido IC

Amount of loss due to congestion:
- About ¥51.2 million/day
- About ¥36.5 million/day
- About ¥15 million/day
- About ¥10 million/day
- About ¥5 million/day
- About ¥0 million/day

Degree of satisfaction over tolls

- 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)

Analyze effects of measures and projects

An increase of 30%
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.

(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)

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 for purchase of ETC system-mounted automobiles
- Implementation of support system such as monitoring and leasing together with social experiment

Subsequent administrative management should reflect evaluation results

Link to improvement

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

Policy Theme: Reducing Congestion
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.

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.

Policy Theme: Reducing Congestion
Analyze effects of measures and projects
Policy Theme: Removing Telephone Poles and Wires

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.

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

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.

Significant difference among different types of roads

<table>
<thead>
<tr>
<th>Type of Roads</th>
<th>Directly controlled national highways</th>
<th>Subsidized national highways</th>
<th>Tokyo, Hokkaido, and other Pref. roads</th>
<th>Trunk roads-Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of no telephone poles</td>
<td>18%</td>
<td>5%</td>
<td>7%</td>
<td>9%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Top three</th>
<th>Worst three</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 wards of Tokyo: 45.7%</td>
<td>Sapporo City: 4.3%</td>
</tr>
<tr>
<td>Hiroshima City: 18.7%</td>
<td>Chiba City: 7.1%</td>
</tr>
<tr>
<td>Osaka City: 16.6%</td>
<td>Saitama City and Kobe City: 7.8%</td>
</tr>
</tbody>
</table>

Significant difference among different types of roads

<table>
<thead>
<tr>
<th>Trunk roads</th>
<th>Non-trunk roads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directly controlled national highways</td>
<td>Subsidized national highways</td>
</tr>
<tr>
<td>Ratio of no telephone poles</td>
<td>18%</td>
</tr>
</tbody>
</table>

Regional Difference in Laying Wires Underground. 11% in Tottori, 2% in Ehime: Degree of Achievement in 2003 According to MLIT Report.

Promotion of no telephone poles based on “Telephone-pole-free promotion program” which started in fiscal year 2004. Continued 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.

Subsequent administrative management should reflect evaluation results.

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

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.

<table>
<thead>
<tr>
<th>Rate of ETC usage in FY2003</th>
<th>Target</th>
<th>Actual result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan Highway Public Corp.</td>
<td>-</td>
<td>About 16%</td>
</tr>
<tr>
<td>Metropolitan Expressway Public Corp.</td>
<td>About 20%</td>
<td>About 19%</td>
</tr>
<tr>
<td>Hanshin Expressway Public Corp.</td>
<td>About 15%</td>
<td>About 11%</td>
</tr>
<tr>
<td>Nationwide</td>
<td>About 15%</td>
<td>About 16%</td>
</tr>
</tbody>
</table>

|| Rate of ETC usage | Indicators | Growth rate in the rate of usage |
|-------------------|-------------|---------------------------------|
| As of March 2003  | In March 2003 | In August 2003                  |
| 5.5%             | 4.0%         | 3.4%                            |

Hokkaido

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

In regard to large cities, rate of ETC usage is low in the surrounding regions of Osaka.
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 PLAN 2003 @ Tokyo
~The CAPITAL of JAPAN~

Tokyo Metropolitan Government
Road Council
### Outcome Indices

#### 1. Average Travel Speed, Time Loss due to Congestion

<table>
<thead>
<tr>
<th>Year</th>
<th>Target Speed</th>
<th>Current Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>20.5 km/h</td>
<td>20 km/h</td>
</tr>
<tr>
<td>2003</td>
<td>25 km/h</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>21 km/h</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Time Loss</th>
<th>Target Time Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>369 million person hrs</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>348 million person hrs</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>214 million person hrs</td>
<td></td>
</tr>
</tbody>
</table>

#### 2. % in Use of High-Standard Roads

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Use</th>
<th>Target 2002</th>
<th>Target 2003</th>
<th>Target 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>15.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>15.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>16.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3. Advancement in Use of Roadside Environment by Street Development in Downtown Area

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Use</th>
<th>Target 2003</th>
<th>Target 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>15.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>15.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>17.4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Major Project in 2003

- Improvement project of Tokyo Bay Shore Rd and Ring Rd 7 for overpass crossing
- Opening of Kiyosuna Bridge on Arakawa River
- Conducting travel speed survey
- Development of Hino Bypass on Route 20
- Extension of Ken'yo Rd to Akiruno Interchange
- Street development project on Meguro Street, Minato Ward, Shirokane district
- Designation of Sambonsugi Overhead on Ring Rd 8 as truck route by improvement of weight capacity
Policy Target II: Building Roads Improving Roadside Environment

1. Improvement of Roadside Environment

2. Creation of Pleasant Roadside Environment

5. Achievement Rate in NO2 and SPM Standards

<table>
<thead>
<tr>
<th>Current: 2002</th>
<th>Target: 2003</th>
<th>Target: ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO2 %</td>
<td>NO2 %</td>
<td>NO2 %</td>
</tr>
<tr>
<td>CO2 %</td>
<td>SPM %</td>
<td>SPM %</td>
</tr>
<tr>
<td>O2 68%</td>
<td>SPM 23%</td>
<td></td>
</tr>
</tbody>
</table>

Note: Rate will be set when NO2 and SPM Reduction Plan by Tokyo Metropolitan Gov’t is established

6. Extension of Targeted Roads for Noise Measure

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>414km</td>
<td>471km</td>
<td>643km</td>
</tr>
</tbody>
</table>

7. Land Area of Greenery Space

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.29 mill m²</td>
<td>2.35 mill m²</td>
<td>2.55 mill m²</td>
</tr>
</tbody>
</table>

Major Project in 2003

Congestion mitigation by developing major arterial roads and eliminating bottlenecks

- Development of Rind Rd 8
- Development of Route 1 near Minami-Magome District, Ota-Ward and Route 15 near Ginza District, Chuo Ward

- Creation of greenery space equivalent to area of Tokyo Dome (47,000 m²) by road development
Policy Target III: Building Roads for Reassurance, Safety, and People’s Lives

1. Realizing Safe Road Traffic
   - Current: 2002
     - 193 Accidents/100 million VKT
   - Target: 2003
     - 189 Accidents/100 million VKT
   - Target: 2007
     - 174 Accidents/100 million VKT

2. Developing Walkable Sidewalks for Everyone
   - Current: 2002
     - 41.8%
   - Target: 2003
     - 45.4%
   - Target: 2010
     - 100%

3. Forming Safe and Anti-Disaster Built-up Areas
   - Current: 2002
     - 26.8%
   - Target: 2003
     - 27.8%
   - Target: 2007
     - 32.1%

4. Supporting Lives in Mountainous areas and Islands
   - Current: 2002
     - 49.1%
   - Target: 2003
     - 49.7%
   - Target: 2007
     - 54.3%

8. Fatal Road Accident Rate
   - Current: 2002
     - 193 Accidents/100 million VKT
   - Target: 2003
     - 189 Accidents/100 million VKT
   - Target: 2007
     - 174 Accidents/100 million VKT

9. Rate of Sidewalks Made into Barrier-free
   - Current: 2002
     - 41.8%
   - Target: 2003
     - 45.4%
   - Target: 2010
     - 100%

10. Rate of No Power Poles on Street
    - Current: 2002
      - 26.8%
    - Target: 2003
      - 27.8%
    - Target: 2007
      - 32.1%

11. Rate of Development of Roads Work as Anti-Fire Wall
    - 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%

Major Project in 2003

- Reduction of through traffic on Livelihood Streets by development of arterial roads
- 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
- Street development of Subsidiary Rd 54 near Chitosedai, Setagaya Ward
- Development of Chichijima circular road
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
### Outcome goals for Yamagata Prefecture

#### Main projects to be Implemented to Achieve Goals

<table>
<thead>
<tr>
<th>National Road 7</th>
<th>National Road 13</th>
<th>National Road 112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mikawabypass</td>
<td>Elevation of Matsuoka intersection</td>
<td>Teppomachi underground pedestrian crossing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kamozakabypass</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tsuruoka district power line / utility tunnel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hinode sidewalk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Akayubypass (a section)</td>
</tr>
<tr>
<td>National Road 286</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Road 345</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Road 458</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Indicator

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Current Indicator Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Loss due to Congestion (Amount of congestion loss)</td>
<td>2.5% share</td>
</tr>
<tr>
<td>Ratio of Deaths &amp; Injury Accidents</td>
<td>32.8 hr/yr/person</td>
</tr>
<tr>
<td>Percentage of deaths</td>
<td>32.8 hr/yr/person</td>
</tr>
</tbody>
</table>

#### Target

- **Time Loss due to Congestion**: Reduction of 1 hr/yr/person
- **Ratio of Deaths & Injury Accidents**: No. of main congestion points 30 (2002); 11 (2003)
- **Percentage of deaths** | 0.76 person/100 million vehicle-km |
- **Percentage of deaths** | 32.8 hr/yr/person |

#### Reason for Setting target

- Implement measures to eliminate and alleviate 6 points (3 points in Yamagata urban areas)

### 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.
### 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:**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Prefecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of sections where driving speed is reduced during winter</td>
<td>Performance Plan 2003 for roads in Yamagata Pref.</td>
</tr>
<tr>
<td>Ratio of snow removal in school zones during winter</td>
<td>Performance Plan 2003 for roads in Aomori Pref.</td>
</tr>
<tr>
<td>Ratio of population arriving at advanced medical facilities for new born babies in 60 minutes</td>
<td>Performance Plan 2003 for roads in Aomori Pref.</td>
</tr>
<tr>
<td>Ratio of safe areas for passing (automobiles and pedestrians)</td>
<td>Performance Plan 2003 for roads in Niigata Pref.</td>
</tr>
<tr>
<td>Time required between seven areas and the city center</td>
<td>Performance Plan 2003 for roads in Fukushima Pref.</td>
</tr>
<tr>
<td>Time loss (amount) due to reduction of driving services during winter.</td>
<td>Performance Plan 2003 for roads in Akita Pref.</td>
</tr>
<tr>
<td>Percentage of sidewalks with sufficient room in city area.</td>
<td>Performance Plan 2003 for roads in Toyama Pref.</td>
</tr>
</tbody>
</table>
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.

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Morioka Times
(July 25, 2004)

Congestion Loss reduced by ¥6 Billion.
Iwate River and National Highway Work Office estimates Effects of Upgraded Roads.
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

Regional Bureaus
- Survey of number of days under traffic control due to road works
- To be reflected in project management

MLIT
- Calculates hours of road works per 1km (hours/km) and adds up (plan).

Each Month

Feedback

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.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hokkaido</td>
<td>116</td>
<td>111</td>
<td>104</td>
<td>0.90</td>
</tr>
<tr>
<td>Tohoku</td>
<td>166</td>
<td>159</td>
<td>140</td>
<td>0.84</td>
</tr>
<tr>
<td>Kanto</td>
<td>431</td>
<td>414</td>
<td>433</td>
<td>1.00</td>
</tr>
<tr>
<td>Hokuriku</td>
<td>191</td>
<td>183</td>
<td>178</td>
<td>0.93</td>
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<tr>
<td>Chubu</td>
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<td>180</td>
<td>180</td>
<td>0.96</td>
</tr>
<tr>
<td>Kinki</td>
<td>241</td>
<td>231</td>
<td>228</td>
<td>0.95</td>
</tr>
<tr>
<td>Chugoku</td>
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<td>206</td>
<td>207</td>
<td>0.96</td>
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<tr>
<td>Shikoku</td>
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<td>178</td>
<td>151</td>
<td>0.82</td>
</tr>
<tr>
<td>Kyushu</td>
<td>199</td>
<td>191</td>
<td>173</td>
<td>0.87</td>
</tr>
<tr>
<td>Okinawa</td>
<td>381</td>
<td>366</td>
<td>333</td>
<td>0.87</td>
</tr>
<tr>
<td>Nationwide</td>
<td>201</td>
<td>193</td>
<td>186</td>
<td>0.93</td>
</tr>
<tr>
<td>(directly controlled)</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
## 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

<table>
<thead>
<tr>
<th>Applications to daily management</th>
<th>Status Quo</th>
<th>Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adding up data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status Quo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency (time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Every month (end of the month)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data on traffic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Each fiscal year (March)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Congestion loss: monitoring zones)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Status Quo

- **Adding up data:**
  - **Time for adding up:** One month later.  
  - **Frequency (time):** Each month (end of the month).

- **Congestion data (traffic counter data):**
  - In the future part of probe data will be added promptly.

- **Frequency (time):** Each month (end of the month).

### Improvements

- **Adding up data:**
  - **Time for adding up:** One month later.
  - **Frequency (time):** Each month (end of the month).

#### Applications

1. Time loss due to traffic congestion (congestion monitoring zones)

2. Ratio of ETC usage (Hanshin Expressway)

3. Hours of road work (Nationwide)

4. Ratio of high standard road usage (Targeted traffic that will be newly switched over to expressways during the current fiscal year)

5. Ratio of roads with access to hub airports and ports

6. Ratio of main cities in neighboring regions that are connected to each other by an upgraded national road

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

8. % of barrier-free main roads in the vicinity of passenger facilities with a daily user volume of more than 5,000

9. Percentage of trunk roads in urban areas without utility poles

10. Level of road user satisfaction

11. Road structure maintenance ratio

12. Percentage of cities that have rescue routes covering a wide area in the event of disasters

13. Reduction of CO₂ emission

14. Ratio of NO₂ environmental goal achievement

15. Ratio of SPM environmental goal achievement

16. Achievement rate of required limits on nighttime noise

17. Number of hits on homepage
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
  - Shifting from "Budgeting by road type" to "Budgeting by performance" (concept image)

- Budgets
  - Budget for improving designated national roads
  - Subsidize budget for improving national roads
  - Subsidize budget for modification of prefecture roads
  - Subsidize budget for street projects, etc.
  - Budget for projects to achieve smoother traffic
  - Budget for inter-regional collaborative projects
  - Budget for improving environment along roads
  - Maintenance budget for traffic safety facilities

- Timelines
  - National version: Jul 2003
  - Regional version: Aug-Sep 2003
  - Etc.
<table>
<thead>
<tr>
<th>Items</th>
<th>Budget amount for 2003 (Project cost)</th>
<th>Project cost for smooth transportation</th>
<th>Time loss due to congestion</th>
<th>Project cost for regional alliance support</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of people able to have a safe and pleasant drive into the city, the center of daily life, in under 30 minutes</td>
<td>¥847.7 billion</td>
<td>¥2,033.1 billion</td>
<td>¥1940.1 billion</td>
<td>¥106.5 billion</td>
<td>1.12</td>
</tr>
<tr>
<td>¥758.1 billion</td>
<td></td>
<td></td>
<td>¥276.3 billion</td>
<td>¥265.1 billion</td>
<td>1.12</td>
</tr>
<tr>
<td>Project cost for improving transportation safety facilities</td>
<td>¥420.1 billion</td>
<td></td>
<td>¥750.7 billion</td>
<td>¥222.8 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Achievement rate of required limits on nighttime noise</td>
<td>¥520.4 billion</td>
<td></td>
<td>¥126.4 billion</td>
<td>¥106.5 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Ratio of high standard road usage</td>
<td></td>
<td></td>
<td>¥750.7 billion</td>
<td>¥279.2 billion</td>
<td>1.05</td>
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<tr>
<td>Ratio of main cities in neighboring regions that are connected to each other by an upgraded national road</td>
<td></td>
<td></td>
<td>¥276.3 billion</td>
<td>¥279.2 billion</td>
<td>1.01</td>
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<tr>
<td>Project cost for improving roadside environment</td>
<td>¥106.5 billion</td>
<td></td>
<td>¥265.1 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Project cost for promotion of transportation alliance</td>
<td>¥276.3 billion</td>
<td></td>
<td>¥750.7 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Project cost for improving cable utility conduits</td>
<td>¥222.8 billion</td>
<td></td>
<td>¥126.4 billion</td>
<td>¥106.5 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Percentage of trunk roads in urban area without telephone poles</td>
<td></td>
<td></td>
<td>¥750.7 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Percentage of cities that have rescue routes covering a wide area in the event of disasters</td>
<td></td>
<td></td>
<td>¥276.3 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Maintenance and repair project cost</td>
<td></td>
<td></td>
<td>¥750.7 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Project cost for improving transportation safety facilities</td>
<td>¥420.1 billion</td>
<td></td>
<td>¥126.4 billion</td>
<td>¥106.5 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Project cost for promoting transportation alliance</td>
<td>¥276.3 billion</td>
<td></td>
<td>¥750.7 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Project cost for promoting transportation alliance</td>
<td>¥279.2 billion</td>
<td></td>
<td>¥750.7 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Project cost for promoting transportation alliance</td>
<td>¥750.7 billion</td>
<td></td>
<td>¥279.2 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Project cost for promoting transportation alliance</td>
<td>¥279.2 billion</td>
<td></td>
<td>¥750.7 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
<tr>
<td>Project cost for promoting transportation alliance</td>
<td>¥750.7 billion</td>
<td></td>
<td>¥279.2 billion</td>
<td>¥279.2 billion</td>
<td>1.19</td>
</tr>
</tbody>
</table>
**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.

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

**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.

**Measures to cope with local circumstances**

**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.
<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

**National Data Tabulation System**
- MLIT System Area
  - Data confirmed on national level
- Regional Office System Area
  - Data confirmed by Regional Development Offices and sent to MLIT system area

**Local Office Data Processing System**
- Data confirmed by local office and sent to National system
- Data collected through Probe cars

**Network**
- Client PC at MLIT
  - Data can be viewed through MLIT website
- Client PC at Regional Development Office
- Client PC at Local office
  - Calculation results of the total loss due to congestion can be viewed through the MLIT* website.

- Disclosure
- Data Utilization

• 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)

<table>
<thead>
<tr>
<th>Area</th>
<th>Time Lost (million person-hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Tokyo (Metropolis + 3 Prefectures)</td>
<td>881</td>
</tr>
<tr>
<td>Within Ken'odo Road</td>
<td>793</td>
</tr>
<tr>
<td>Within Outer Ring Road</td>
<td>355</td>
</tr>
</tbody>
</table>

Proportion of nationwide time lost due to congestion by area:
- Greater Tokyo: 23%
- Within Ken'odo: 21%
- Within Outer Ring: 10%
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

* 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)

Before the experiment

Amount of congestion loss: About ¥51.2 million/day

During the experiment

Amount of congestion loss: About ¥36.5 million/day

Reduction in revenue on Joban Expressway, etc.

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

Before the experiment: Wednesday, October 29, 2003

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

Before the experiment: Wednesday, October 29, 2003

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

Understanding the effect of a toll road discount experiment

Congestion loss on National Route 6 improved by ¥14.7 million/day

Amount of congestion loss: About ¥51.2 million/day

Amount of congestion loss: About ¥36.5 million/day

Reduction in revenue on Joban Expressway, etc.

¥600,000/day

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Amount of congestion loss: About ¥51.2 million/day

Amount of congestion loss: About ¥36.5 million/day

Reduction in revenue on Joban Expressway, etc.

¥600,000/day
Analysis of the effect of an individual project in which data were used (e.g. Tohoku)

Change in congestion time loss

15 million people-hours/year

Before opening

12 million people-hours/year

After opening

3 million people-hours/year

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

Analysis of Status Quo with 3D Map

From Ehime Prefecture Version of Performance Plan

Concentrated in Matsuyama City area

Lot of accidents occurred in the city areas of local regions

Explanatory notes
(rate of casualty accidents).
200 incidents/more than 100 million yearly vehicle km
100 incidents/more than 100 million yearly vehicle km.
100 incidents/less than 100 million yearly vehicle km.
Time loss due to traffic congestion.
Matsuyama City area