



Republic of Turkey
Ministry of Transport Maritime Affairs
and Communications



GENERAL DIRECTORATE
of HIGHWAYS



MLIT
Ministry of Land, Infrastructure, Transport and Tourism

ROAD INFRASTRUCTURE & PPP PROJECTS FOR HIGHWAYS IN TURKEY

お招きいただきありがとうございます

13 MARCH
JAPAN

6TH PPP COUNCIL FOR OVERSEAS ROAD PROJECTS MEETING



ROAD INFRASTRUCTURE & PPP PROJECTS FOR HIGHWAYS IN TURKEY



OUTLINE

1

GENERAL OVERVIEW of HIGHWAY NETWORK

2

ROAD INFRASTRUCTURE INVESTMENTS

3

PPP PROJECTS UNDER CONSTRUCTION

4

VISION 2023 PPP PROJECTS



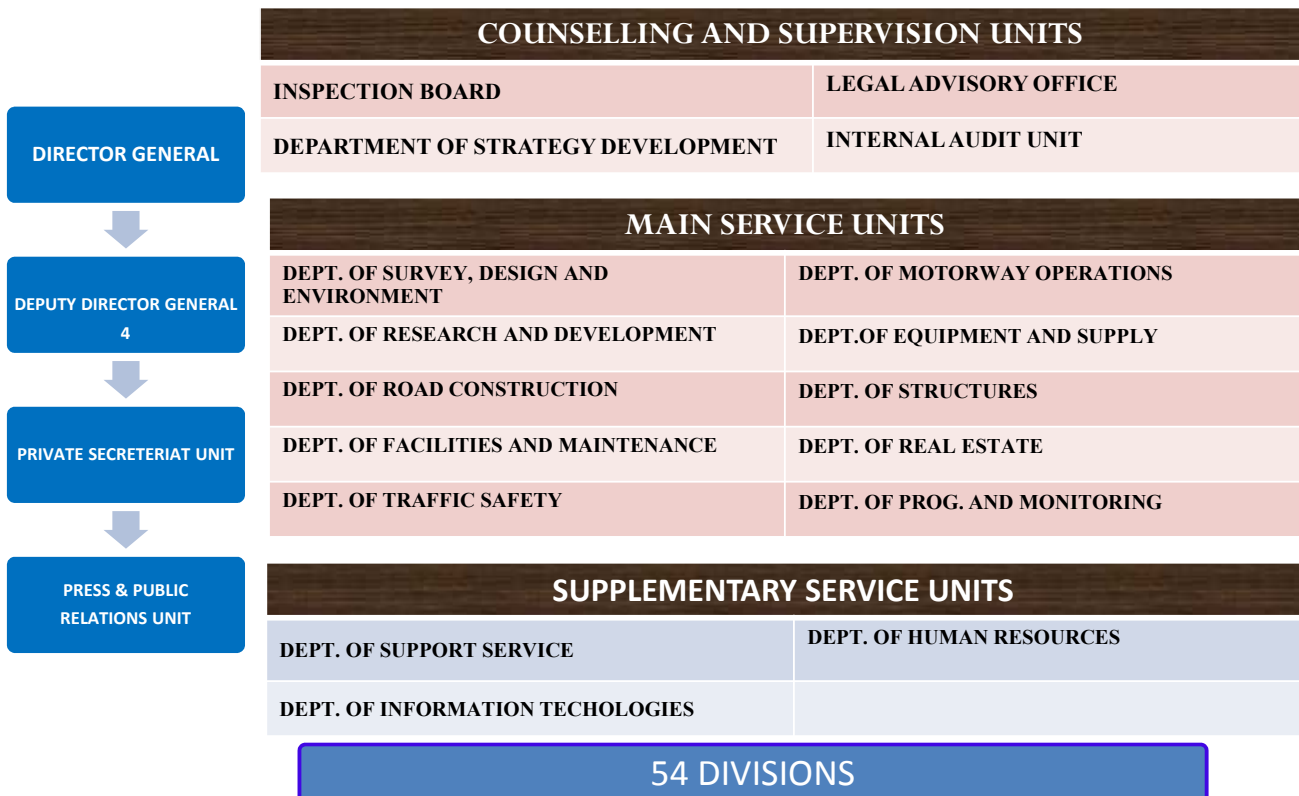


GENERAL DIRECTORATE OF TURKISH HIGHWAYS

- GDH is responsible for planning, design, construction, maintenance, repair and operation of roads, bridges and structures within the network of motorways, state and provincial roads and keep all the network safely in operation in all weather conditions.
- GDH was established on March 1, 1950
- GDH is an affiliated institution of the Ministry of Transport, Maritime Affairs and Communications.



ORGANIZATION CHART



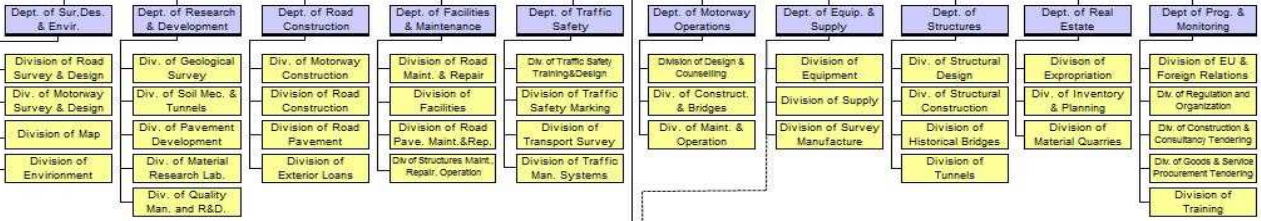


4 DEPUTY DIR. GENERAL

Press & Public
Relations Unit

Private Secretariat
Unit

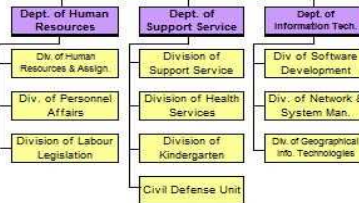
MAIN SERVICE UNITS



COUNSELLING AND SUPERVISION UNITS



SUPPLEMENTARY SERVICE UNITS



CENTRAL ORGANIZATION

REGIONAL ORGANIZATION



REGIONAL DIVISIONS OF GDH



- 18 Regional Divisions
- 118 Subdivisions
- 281 Maintenance Houses

- 25 Motorway Maintenance and Operation Offices
- 2 Equipment and Supply Directories



STRATEGIC PLAN OF TURKISH HIGHWAYS 2012-2016

GOAL 1: Mobility

GOAL 2: Road Traffic Safety

GOAL 3: Organizational Excellence & Continuous Development

GOAL 4: Preserve & Develop Highway Network

GOAL 5: Sensitive to Human Being & Environmental Stewardship



STRATEGIC PLAN OF TURKISH HIGHWAYS 2012-2016

MISSION:

- In a framework of authority entrusted with rule to the institution, to contribute to the social and economic development of the country through planning, designing, constructing, maintaining and operating in every climate conditions of motorways, state and provincial roads, meeting road users' demand, compromising with other transportation systems in a way of providing safe, comfortable, environmentally sensitive roads, meeting contemporary needs.



STRATEGIC PLAN OF TURKISH HIGHWAYS 2012-2016

VISION: To be an institution

- providing safe and comfortable transport service,
- using advanced technologies,
- preparing road projects sensitive to environment and human in a base of reality,
- having a strong budget,
- having smiling personnel and modern management



GENERAL OVERVIEW of HIGHWAY NETWORK

Type: Village and Forest roads
Responsibility: Special
Provincial Administration

Type: Urban roads
Responsibility: Municipal
Authorities



Type: Motorways, State & Provincial roads
Responsibility: General Directorate of Turkish Highways

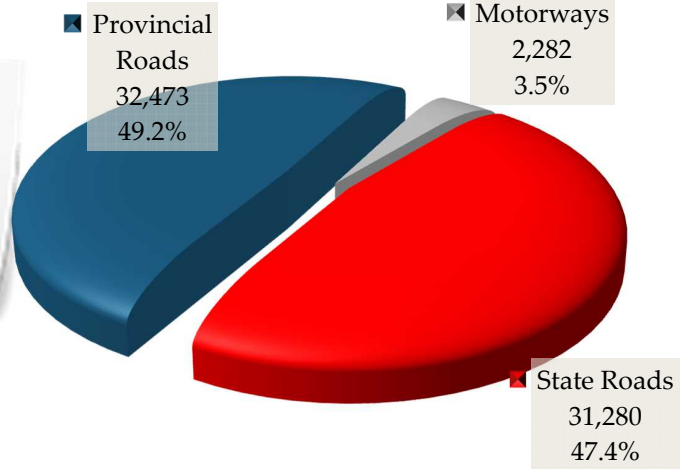
The road network excluding urban roads is about 385.000 km in length



NATIONAL HIGHWAY NETWORK

Highway Network (Km)

- Total road network is 66.035 km.
- 35.9% of total road network (23.716 km) is dual carriageway

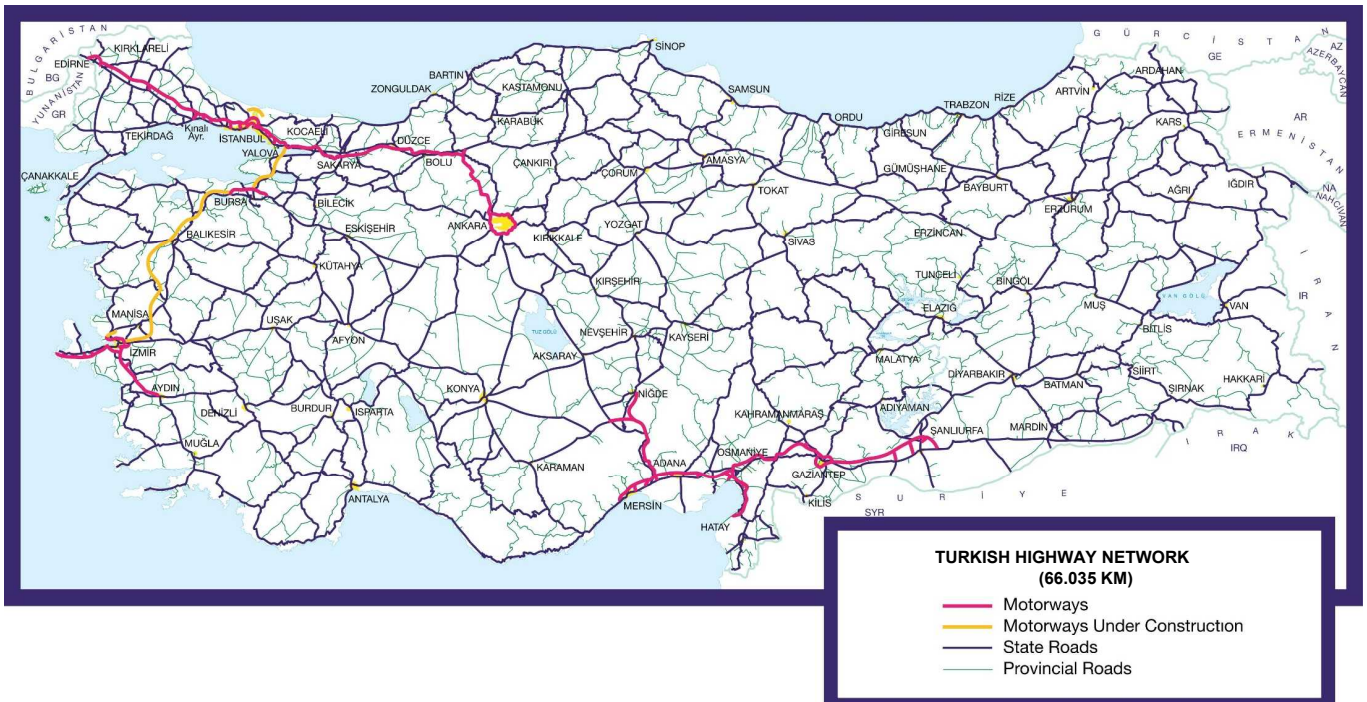


- Total Asset Value: **70 Billion \$**
- Road Density: **50 km / 100 km²** (Excl.Urban Roads)
- Motorway Density: **2.85/ 1000 km²**

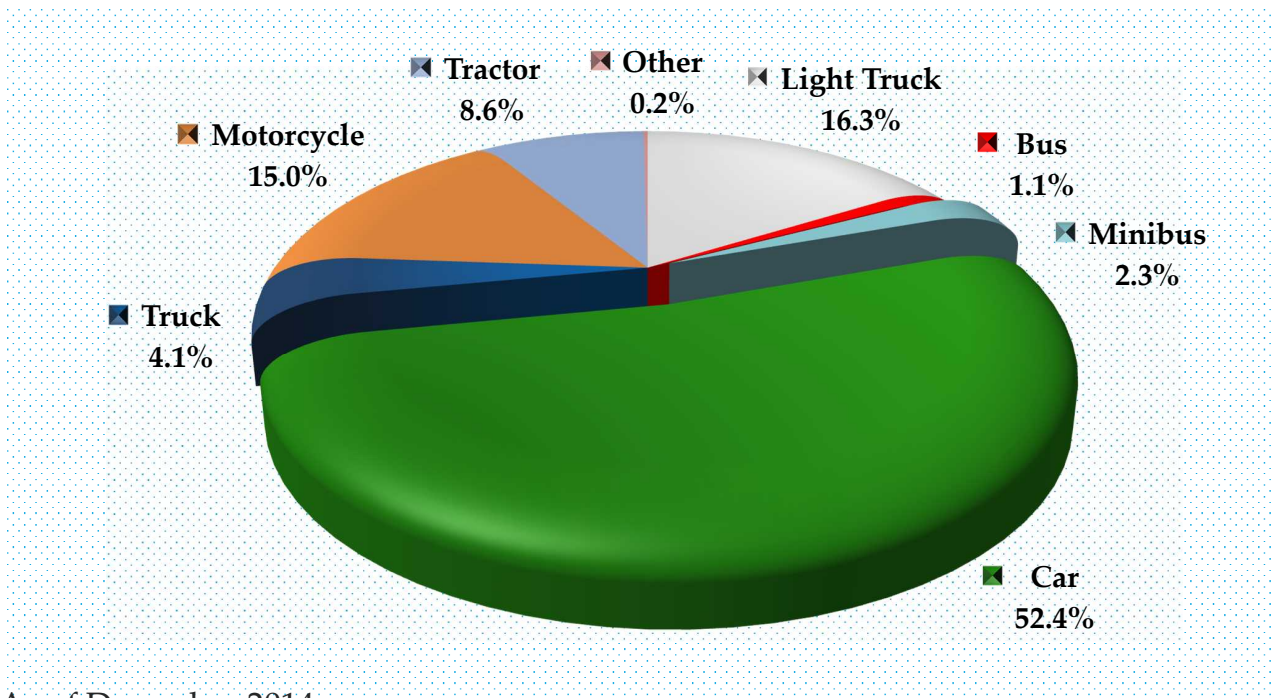


NATIONAL HIGHWAY NETWORK (66.035 km)

- Turkish Road Network under General Directorate of Turkish Highways' responsibility.



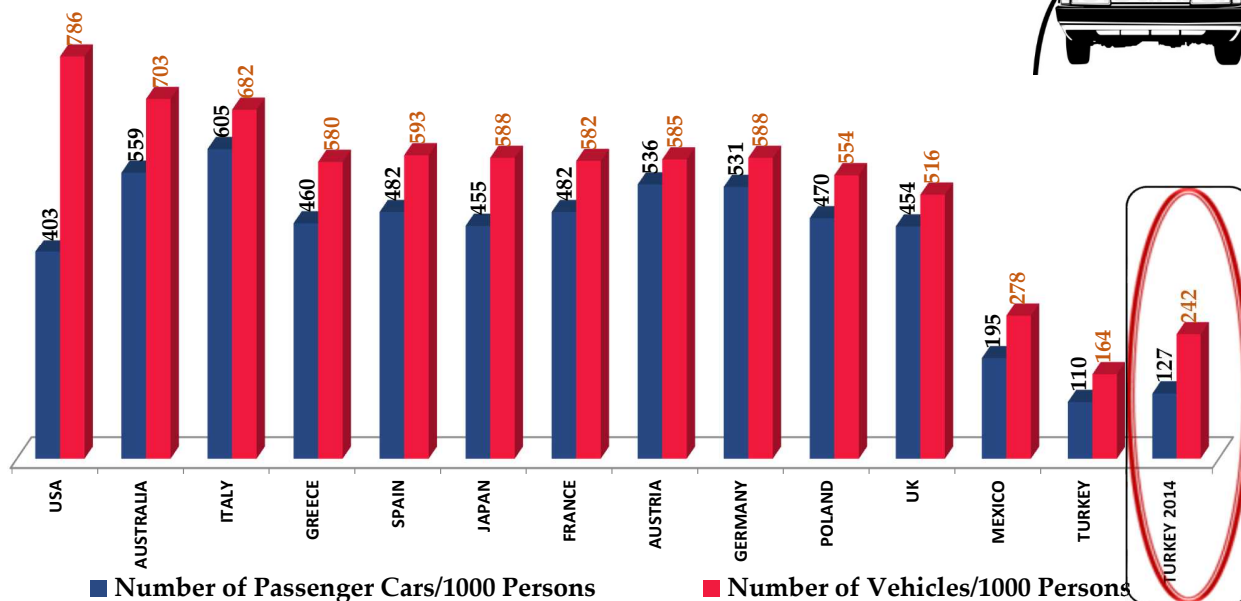
VEHICLE FLEET (DEC 2014)



As of December 2014

- Number of Vehicles: 18.828.721
- Number of Passenger Cars: 9.857.915 (52.4% of Vehicle Fleet)

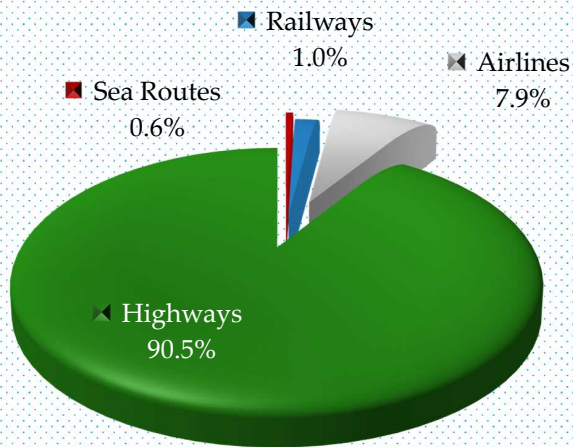
VEHICLE & CAR OWNERSHIP



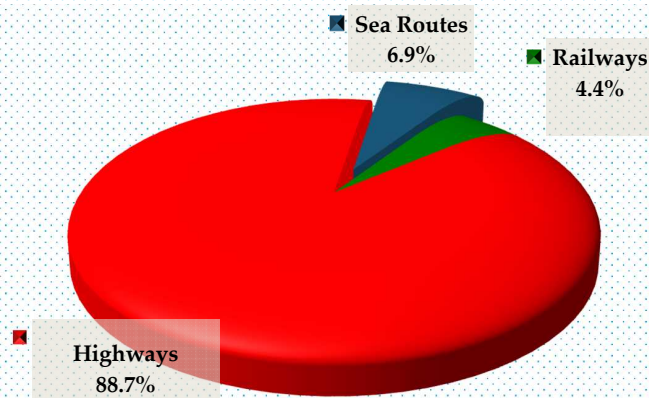
- Car ownership 127 cars per 1000 inhabitants is much lower than the EU and other developed countries.
- High potential for an increase in the number of vehicles per capita (compared to developed countries)

*IRF WORLD ROAD STATISTICS 50 TH YEAR ANNIVERSARY VOLUME 1 DATA 2000-2011

PASSENGER & FREIGHT TRANSPORT 2013



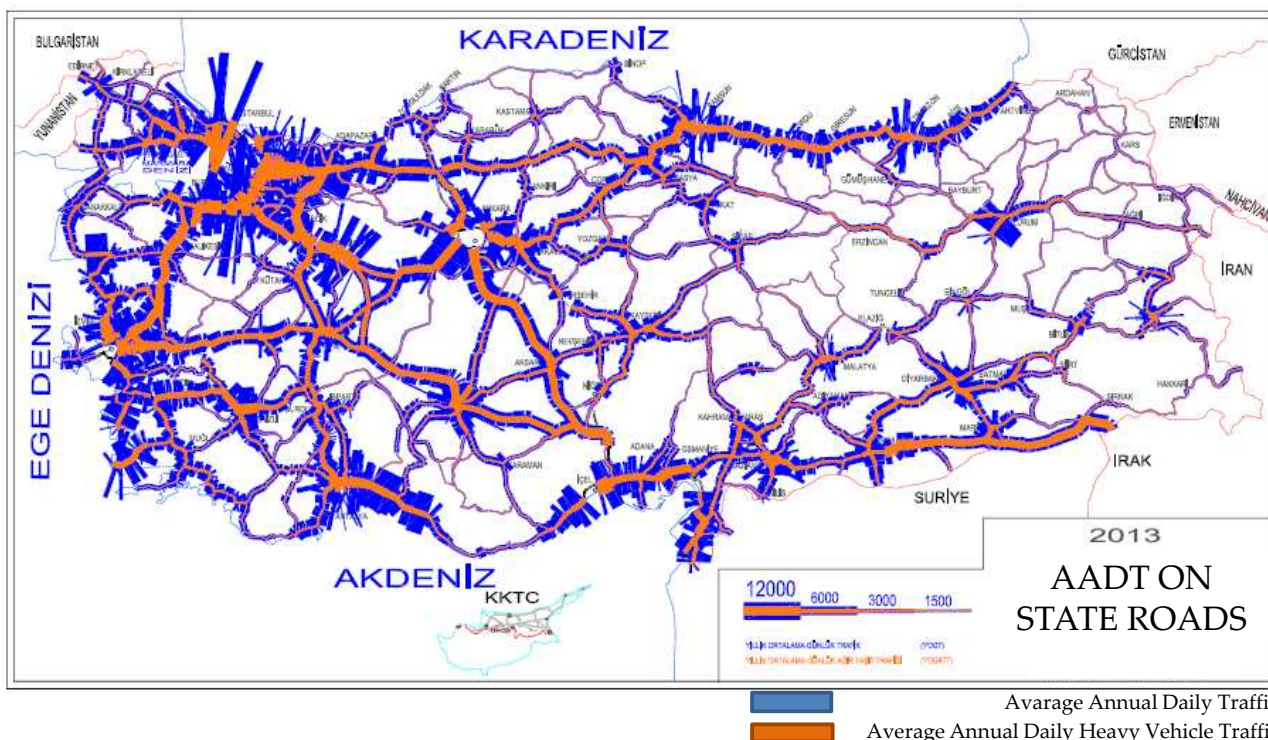
Passenger Transport
Highways: 90.5%



Freight Transport
Highways: 88.7%

TRAFFIC VOLUME MAP 2013

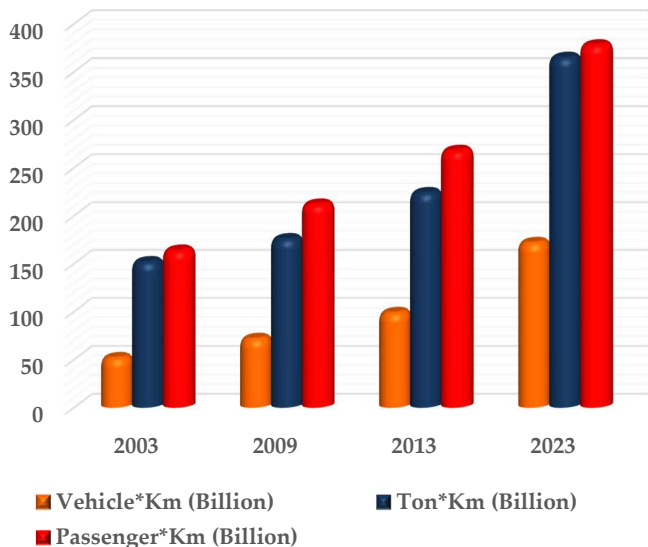
➤ In our highway network, the rate of heavy vehicle traffic volume is 27%



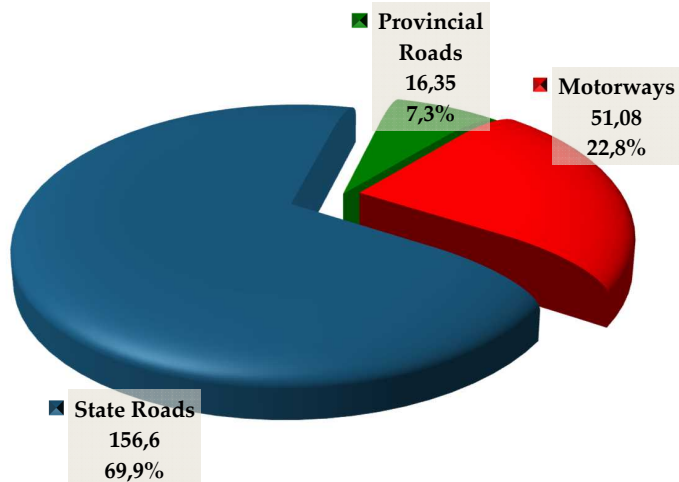


PASSENGER AND FREIGHT TRANSPORT IN HIGHWAYS

Passenger & Freight Transport



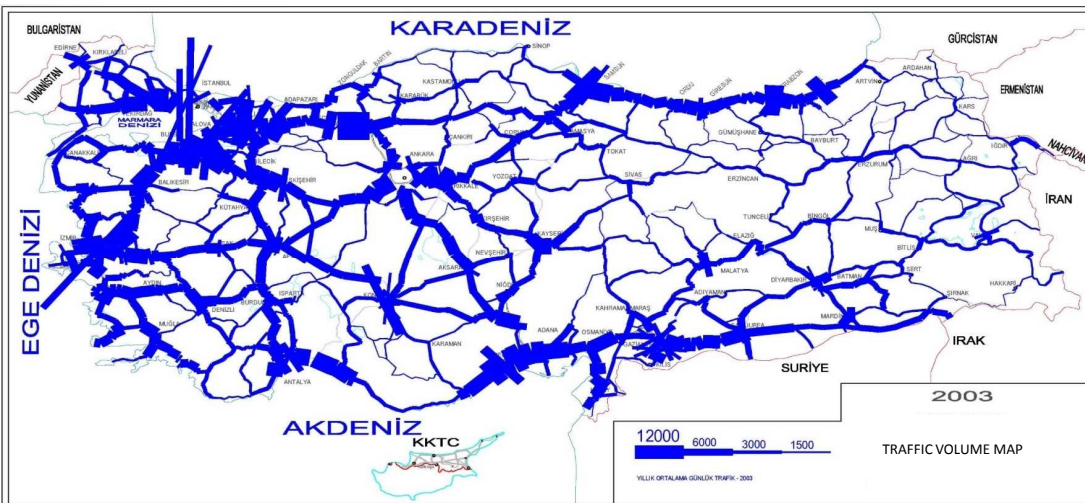
FREIGHT TRANSPORT 2013 (Billion TonxKm)



➤ 90 % increase in vehicle-km, 47 % increase in ton-km, 63 % increase in passenger-km in the period of 2003 & 2013

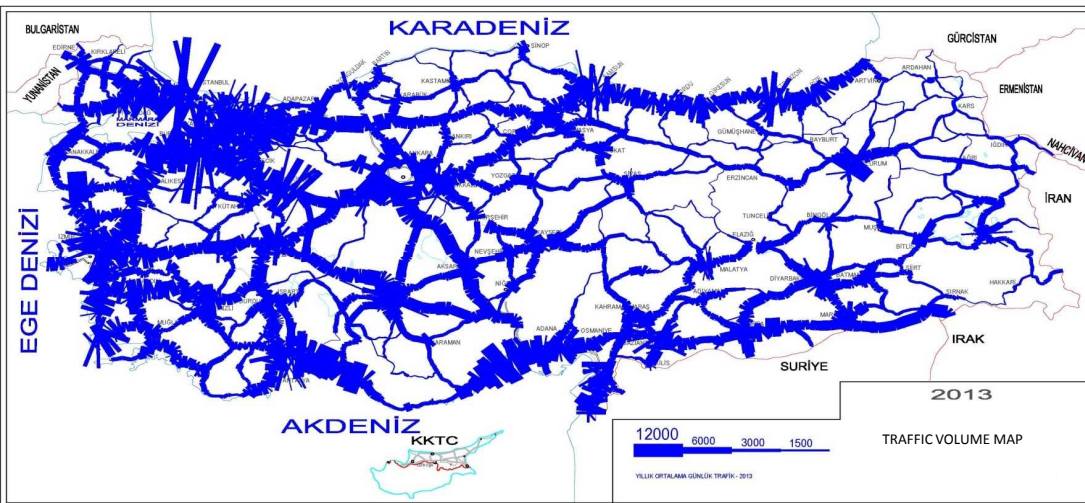
TRAFFIC VOLUME Million Km (2003)

52.349
Total Vehicle-Km

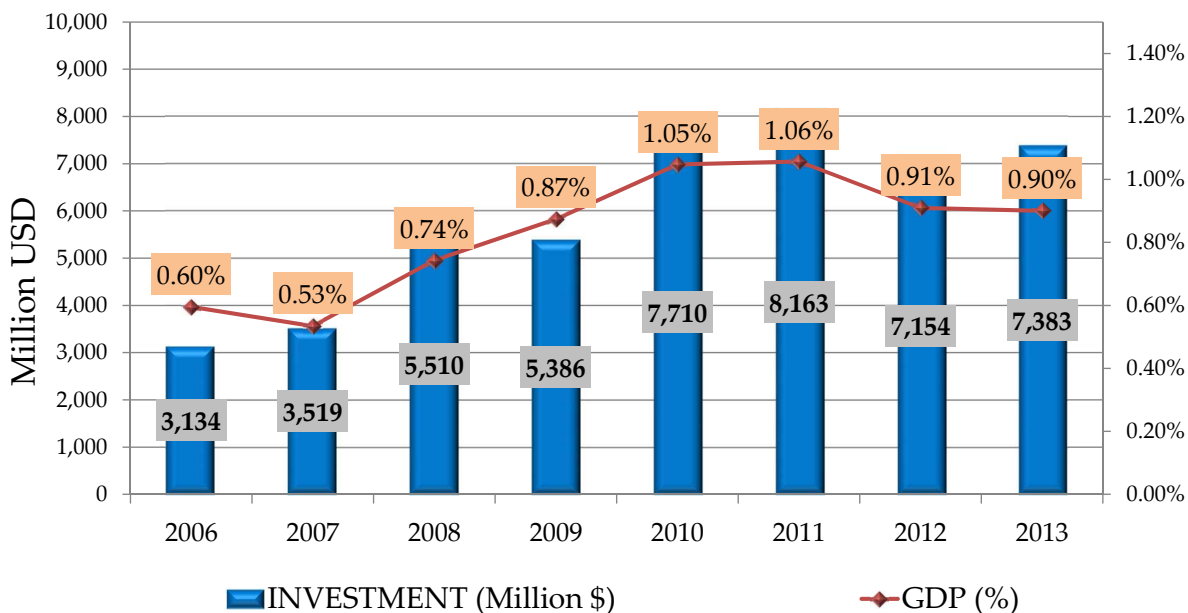


TRAFFIC VOLUME Million Km (2013)

99.431
Total Vehicle-Km



PERCENTAGE OF GDP USED FOR HIGHWAY INFRASTRUCTURE INVESTMENT



ROAD STRUCTURES – TUNNELS, BRIDGES & VIADUCTS

- Number of Tunnels : 83
- Length of Tunnels: 50 km

2003



- Number of Tunnels : 227
- Length of Tunnels: 207 km

2014



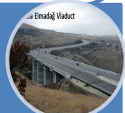
- Number of Tunnels : 114
- Length of Tunnels: 284 km

Under Construction



- Number of Bridges&Viaducts : 5.967
- Length of Bridges&Viaducts: 311 km

2003



- Number of Bridges&Viaducts : 7.723
- Length of Bridges&Viaducts 440 km

2014

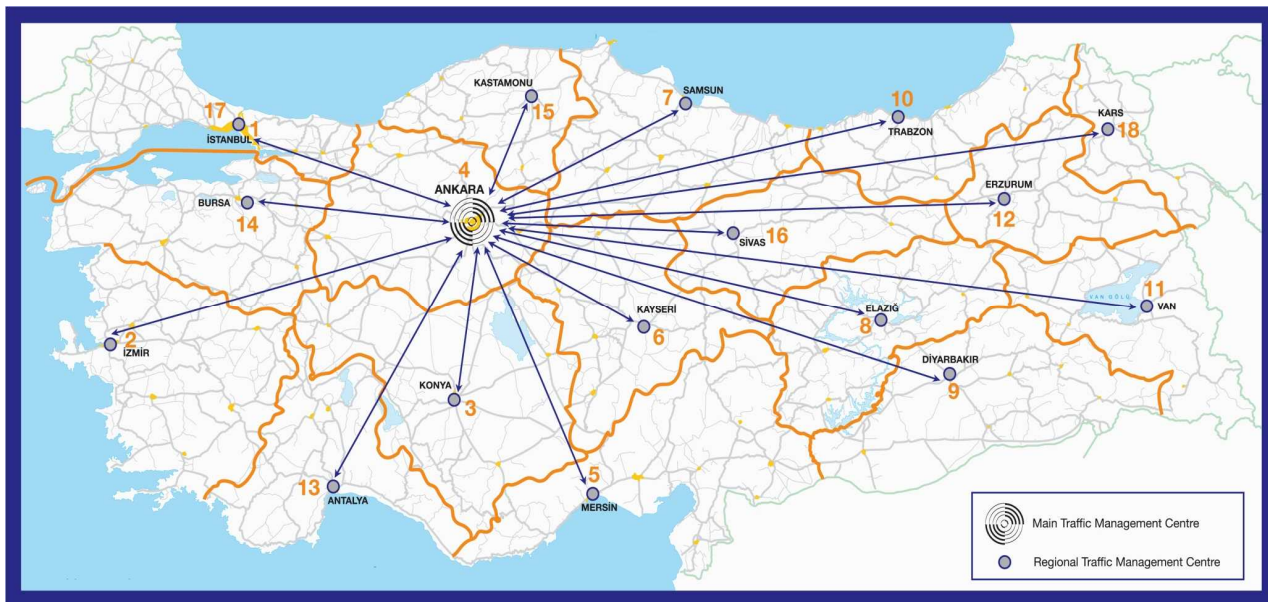


- Number of Bridges&Viaducts : 457
- Length of Bridges&Viaducts 64 km

Under Construction



INTELLIGENT TRANSPORTATION SYSTEMS-ITS



- Nationwide integrated system
- Main Traffic Management Centre in Ankara
- 17 Regional Traffic Management Centres
- Fibre optic cable 7500 km for inter-centre communication
- Widespread implementation of traffic management & traveller information systems on state & provincial roads
- Completion of the project up to 2023

TOLL COLLECTION

OGS (DSRC-ACTIVE)

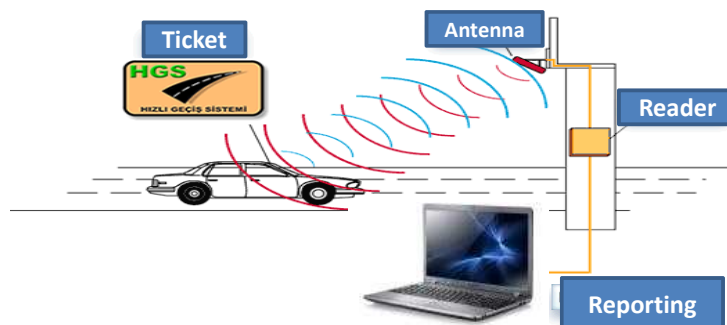
- 1.978.795 Subscribers
- 38.33% of Payment

HGS (RFID-PASSIVE)

- 7.105.244 Subscribers
- 61.67% of Payment

TOTAL

- 9.084.039 Subscribers
- 400 Million Dollar collected
- 400 Million Vehicles Passed



RESEARCH&DEVELOPMENT

Performance Improvement of Water based Road Marking Paint



Asphalt Recycling



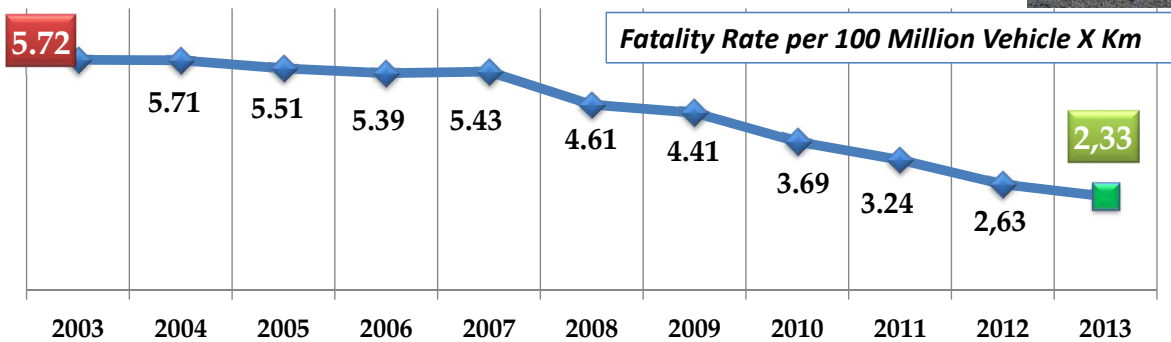
Main Research and Development Subjects

1	Development of Environmental Friendly Water Based Road Marking Paint
2	Development of Warm Mix Asphalt Additives Production and Technologies
3	Development of Pavement Management System
4	Recycling of Asphalt Pavements in plant and in-situ

Pavement Management System



ROAD SAFETY



YEAR	VehicleKm (Million)	Fatality (100 Million VehiclexKm)
2003	52.349	5.72
2004	57.767	5.71
2005	61.129	5.51
2006	64.577	5.39
2007	69.609	5.43
2008	69.771	4.61
2009	72.432	4.41
2010	80.124	3.69
2011	85.495	3.24
2012	94.225	2.63
2013	99.431	2.33

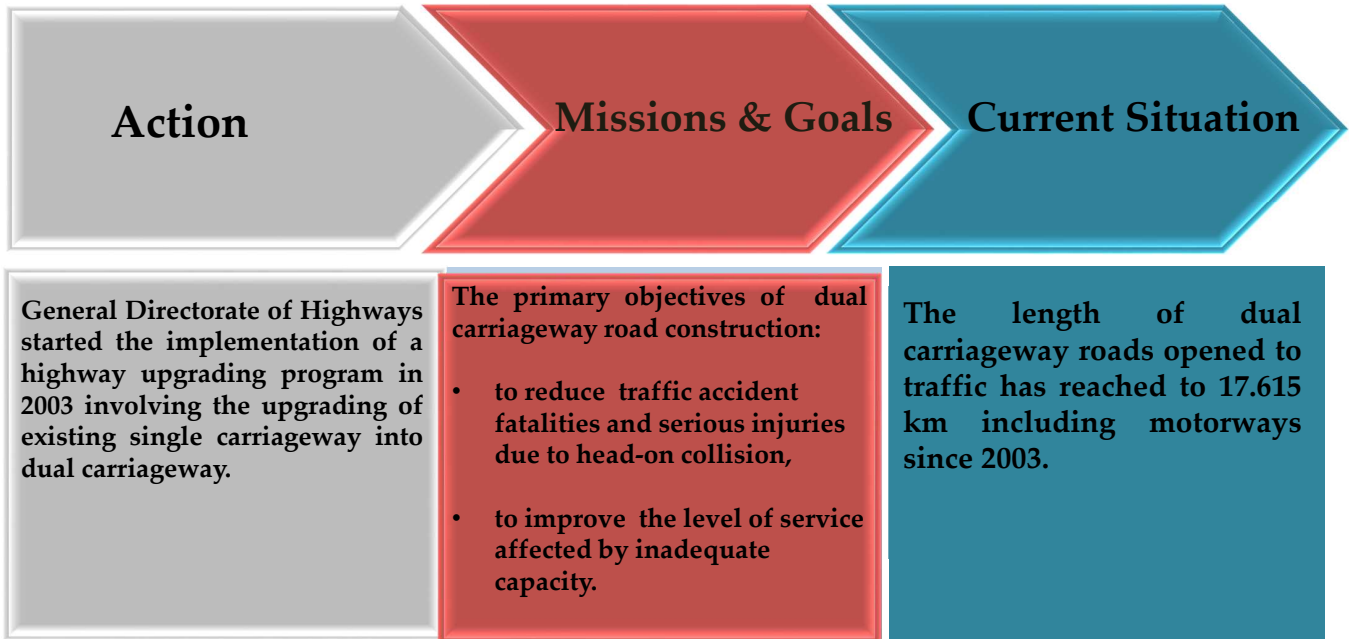
Between 2003 & 2013, we achieved **59%** reduction in fatality rate per 100 Million VehiclexKm.

TARGET 2023

Reduce Fatality Rate below 1 for 100 Million Vehicle x Km



UPGRADING SINGLE CARRIAGEWAYS INTO DUAL CARRIAGEWAYS



EAST-WEST CORRIDORS (8.200 KM)



Corridor	LENGTH (KM)	In Operation	Under Construction	Will be Tendered
D010	1.196	859	58	279
D100	1.838	1.837	1	0
D200	1.247	1.247	0	0
D300	1.917	1.882	18	17
D400	2.002	1.412	66	524
TOTAL	8.200	7.237 (88%)	143 (2%)	820 (10%)



NORTH-SOUTH CORRIDORS (12 186 KM)



	DUAL CARRIAGEWAY	SINGLE CARRIAGEWAY	TOTAL
In Operation	8.828	601	9.429 (77,3%)
Under Construction	1.191	237	1.428 (11,7%)
Will be Tendered	761	568	1.329 (11%)
TOTAL LENGTH	10.780 (88,5%)	1.406 (11,5%)	12.186

MULTILANE DIVIDED HIGHWAY NETWORK (2003)

1.714 Km
MOTORWAY

4.387 Km
MULTILANE DIVIDED STATE&PROVINCIAL ROADS

6.101 Km
TOTAL



HIGHWAY NETWORK: 63.143

MULTILANE DIVIDED HIGHWAY NETWORK (JAN 2015)

2.282Km
MOTORWAY

21.434 Km
MULTILANE DIVIDED STATE&PROVINCIAL ROADS

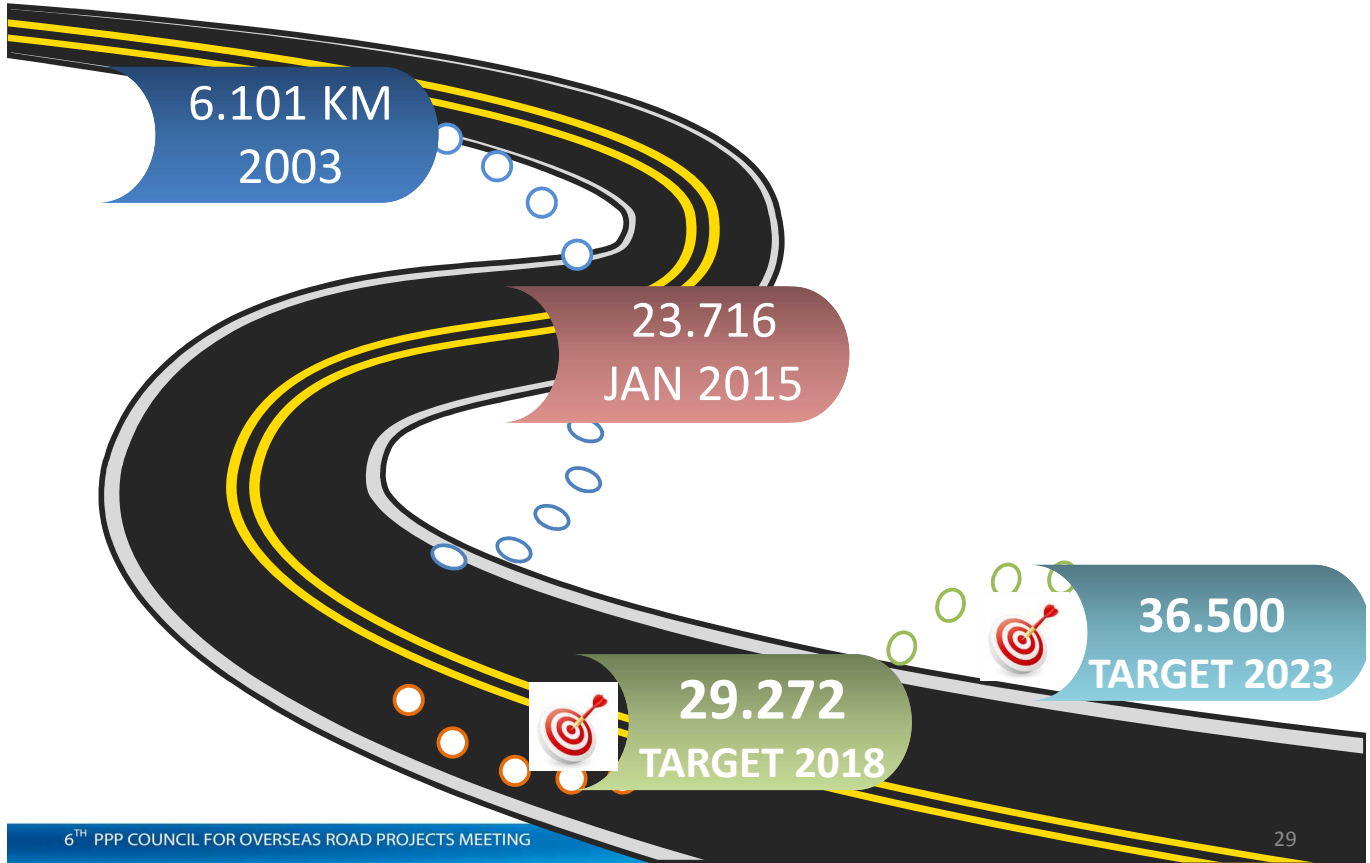
23.716 Km
TOTAL



HIGHWAY NETWORK : 66.035



DUAL CARRIAGEWAY NETWORK



2023 VISION IN 100TH ANNIVERSARY OF THE FOUNDATION OF TURKISH REPUBLIC.

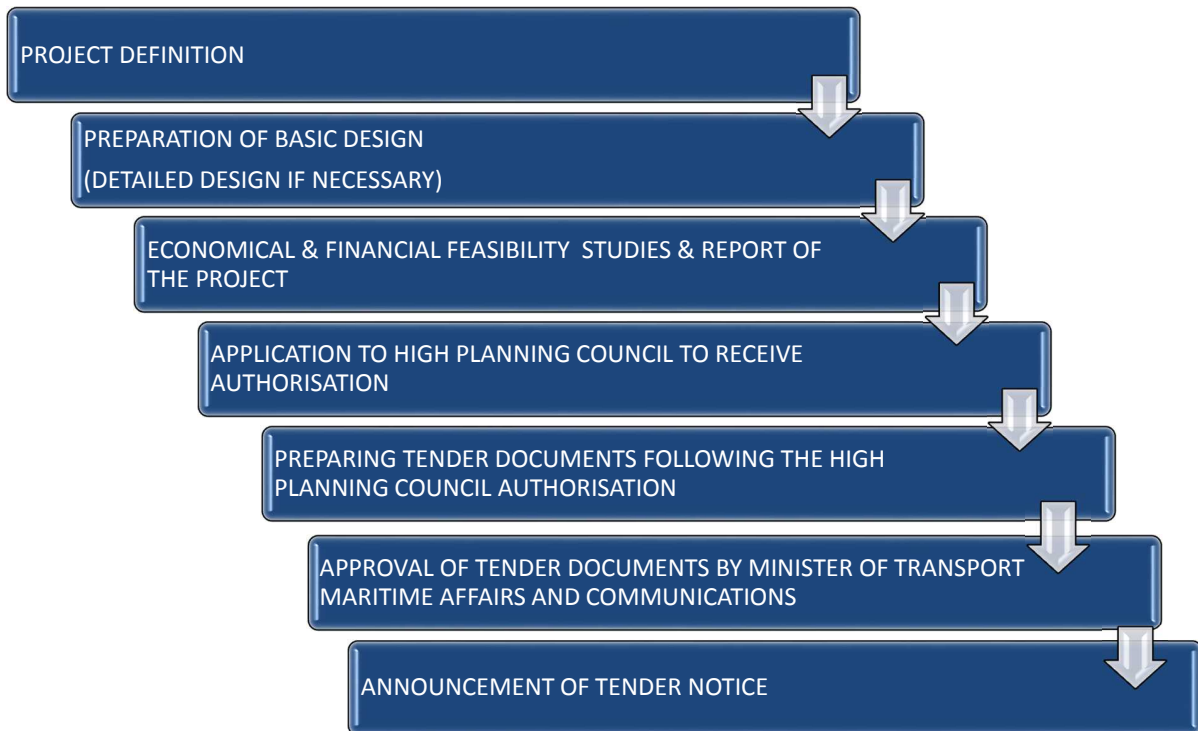
- Population: 85 Million
- GDP per Capita : 25.000 \$
- The world's 10th largest economy : GDP 2 Trillion \$
- 500 Billion US \$ Export

2023





PPP PROJECT PROCESS



PPP PROJECT PROCESS





TURKEY'S PPP POLICY

GENERAL FEATURES OF BOT MOTORWAY CONTRACTS:

- Design specifications and standard are determined by GDH.
(Project start-end points, corridor, technical requirements for special structures like suspension bridges)
- Traffic Guaranty will be provided
- Expropriation costs are partly or wholly covered by Administration
- In case of the termination of Agreement, used loans will be paid by the Treasury
- The Tolls are updated every year based on the guidelines of United Nations Statistics Office
- Financing of project will be covered by the contractor as equity (at least 20%) and loan (80% at most)



PPP MOTORWAY PROJECTS UNDER CONSTRUCTION

**ISTANBUL-İZMİR MOTORWAY
(INCLUDING İZMİT BAY CROSSING
AND CONNECTING ROADS)**

**NORTHERN MARMARA MOTORWAY,
ODAYERİ PAŞAKÖY SECTION
(INCLUDING YAVUZ SULTAN SELİM
CABLE STAYED SUSPENSION BRIDGE)
PROJECT**



İSTANBUL-İZMİR MOTORWAY

Motorway Length : 433 km

Total Cost : 6.5 Billion USD

Contract Period : 22 Year 4 Month
(7 Year Construction + 15 Year 4 Month
Operation)

izmit Bay Bridge 1550 m center span
(4 th longest in the world)

Wire length of the bridge 85.000 Km
(2 times of earth's perimeter)



İSTANBUL-İZMİR MOTORWAY



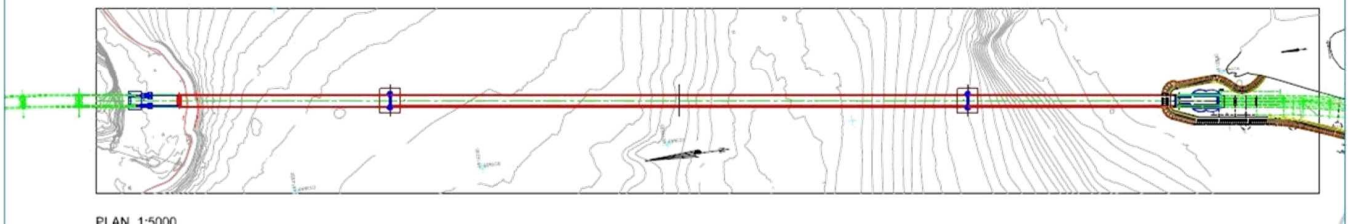
Tower height reached to 252 m
(Tower Design Height 252 m)



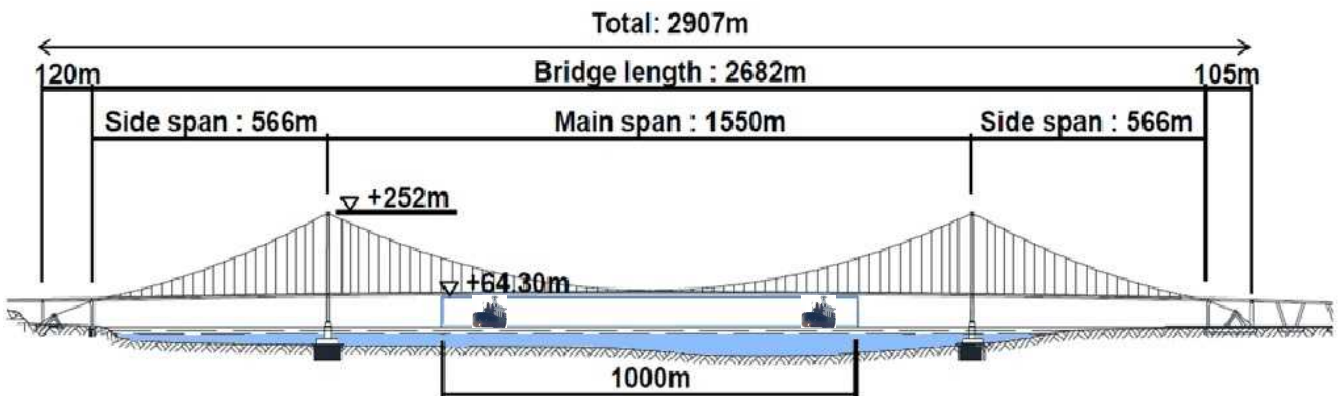
37

GENERAL VIEW OF İZMİT BAY SUSPENSION BRIDGE

İzmit Bay Crossing comprise of ; North Approach Viaduct, Suspension Bridge Main and Side Spans and South Approach Viaduct.



PI AN 1-4000

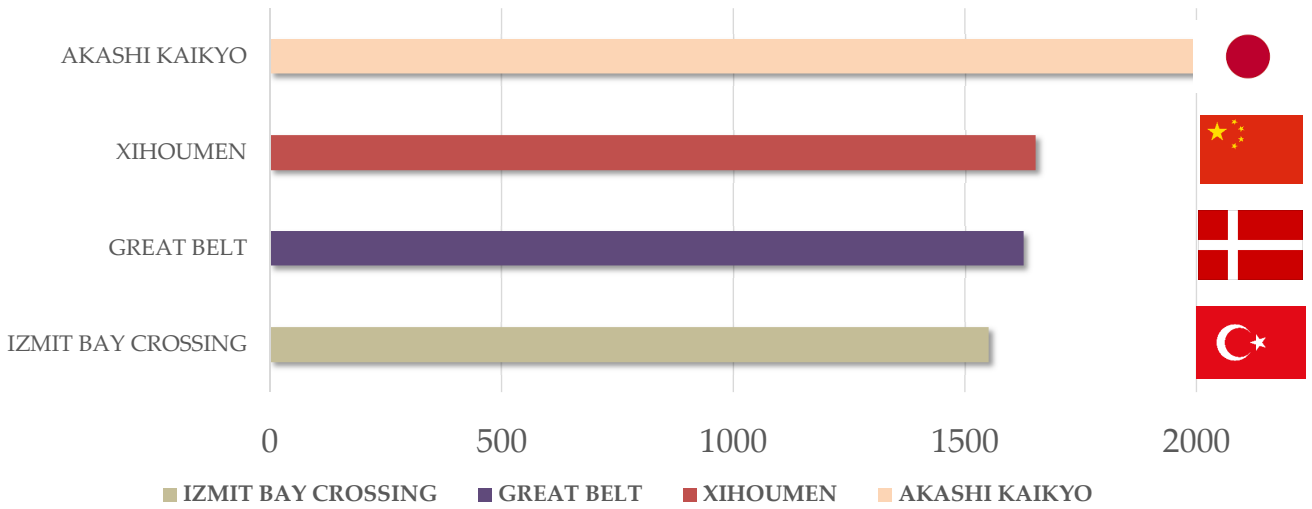


Navigation line 64,30 m x 1000 m

İZMİT BAY SUSPENSION BRIDGE

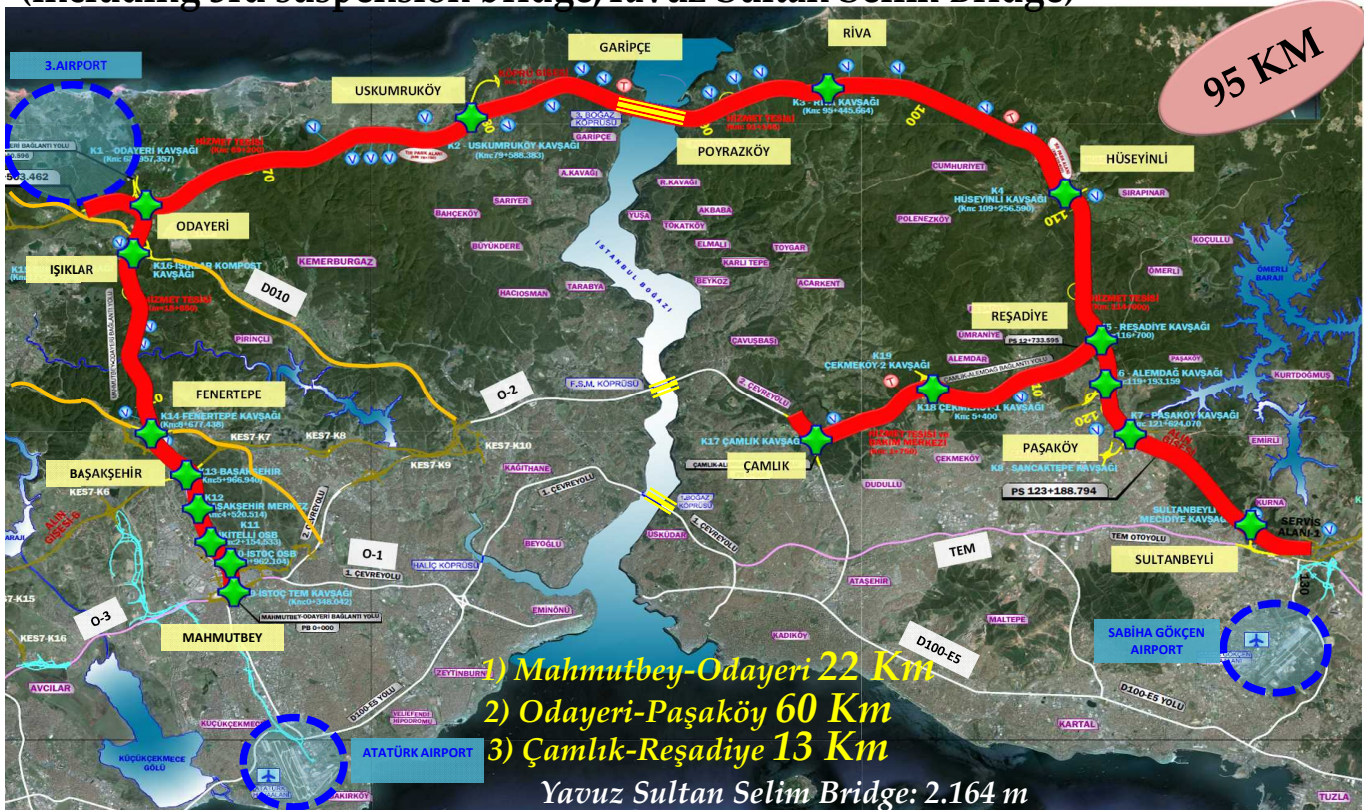
➤ İzmit Bay Suspension Bridge is one of longest Suspension Bridge in the World according to the length of its main span with 1.550m.

Midspan Length (m)



NORTH MARMARA MOTORWAY

(including 3rd suspension bridge, Yavuz Sultan Selim Bridge)



NORTHERN MARMARA MOTORWAY, ODAYERİ PAŞAKÖY SECTION

Motorway Length : 95 km

Total Cost : 2,5 Billion USD

**Contract Period : 10 Year 2 Month
(2,5 Year Construction + 7 Year 8 Month Operation)**

Yavuz Sultan Selim Bridge

- 1408 m main span (The Bridge will be the longest suspension bridge in the world which has a rail system on it, 2x4 lanes of motorway and 2 lanes of railway on the same deck.
- The width of the deck will be 59 meters, the largest in the world.
- Also it will have the highest tower in the world with a height of 320 meters.

NORTHERN MARMARA MOTORWAY, ODAYERİ PAŞAKÖY SECTION

ODAYERİ

GARİPÇE

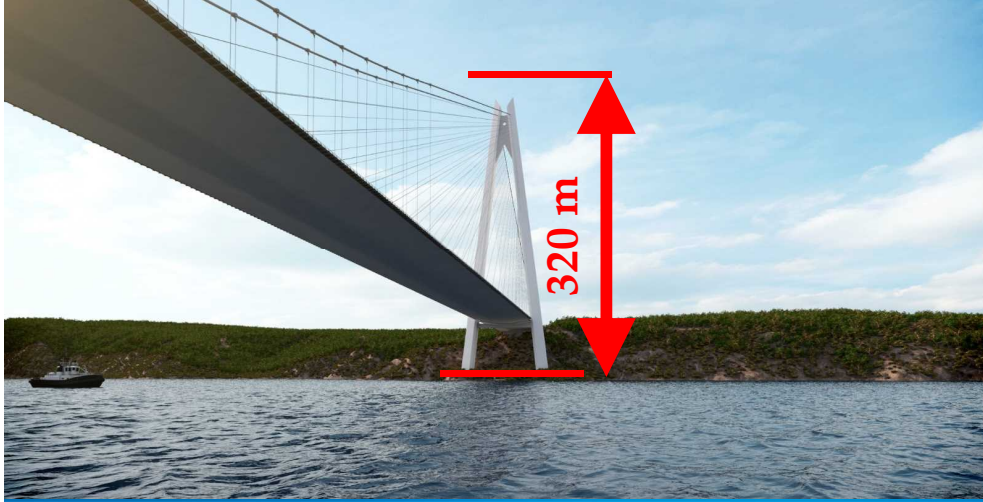
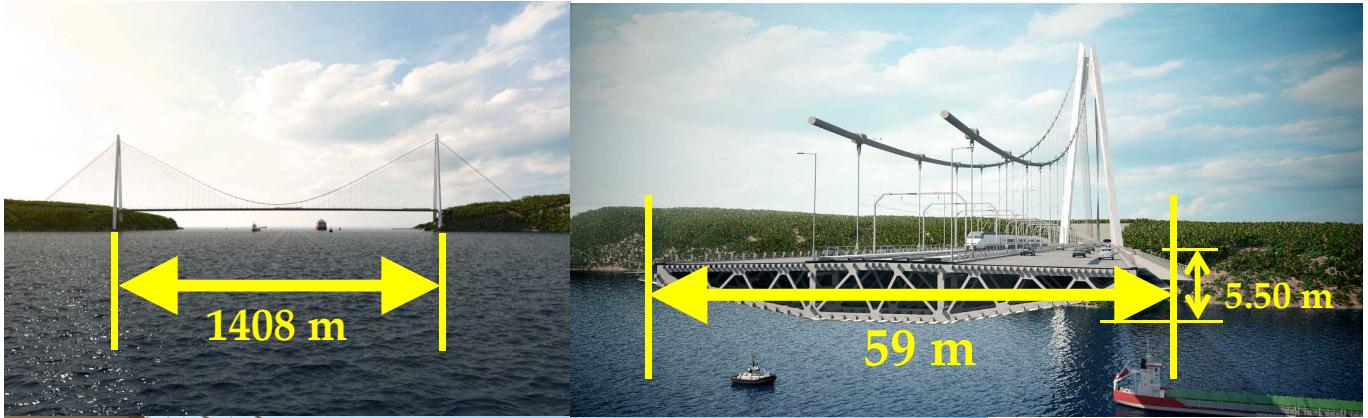
POYRAZKÖY

REŞADİYE

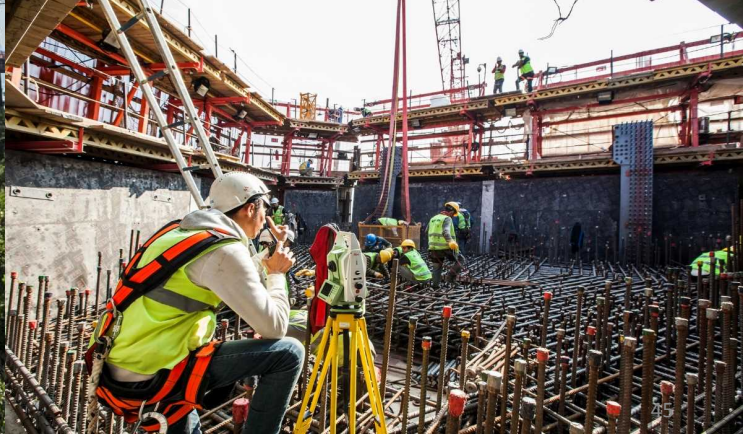
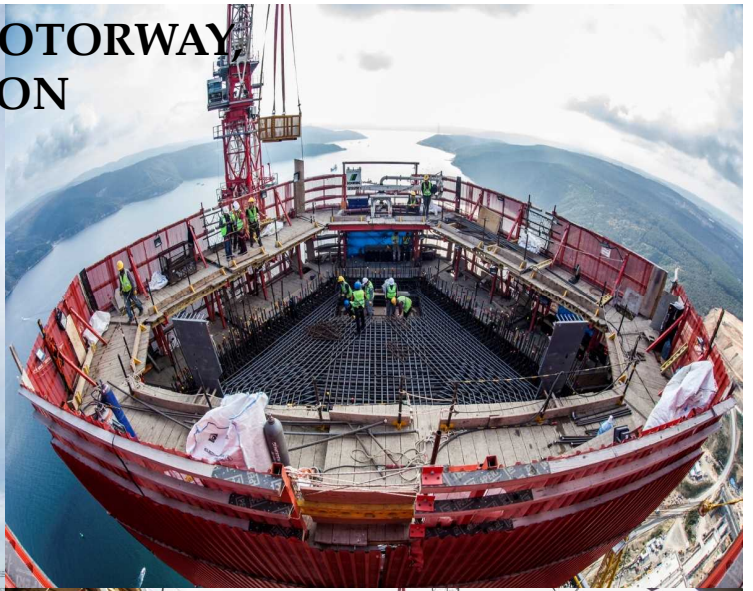
İSTOÇ

ÇAMLIK

PAŞAKÖY



NORTHERN MARMARA MOTORWAY ODAYERİ PAŞAKÖY SECTION



ROAD INFRASTRUCTURE & PPP PROJECTS FOR HIGHWAYS IN TURKEY

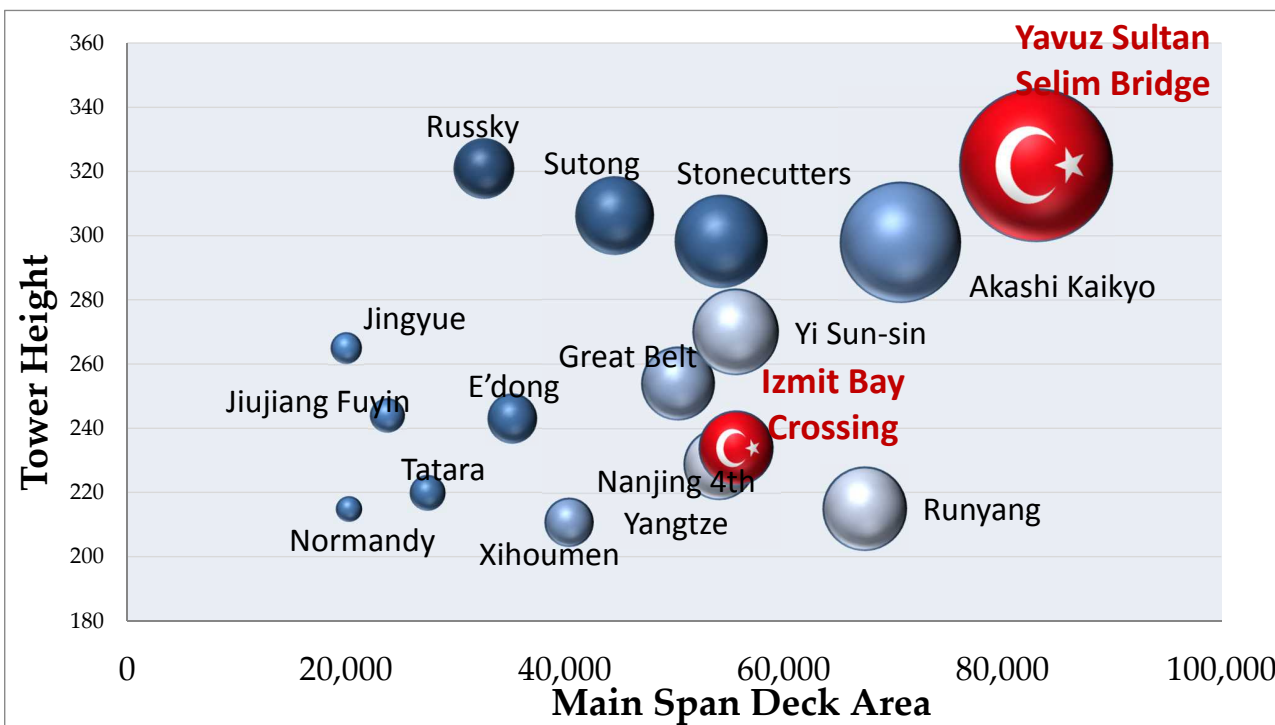


Yavuz Sultan Selim BRIDGE

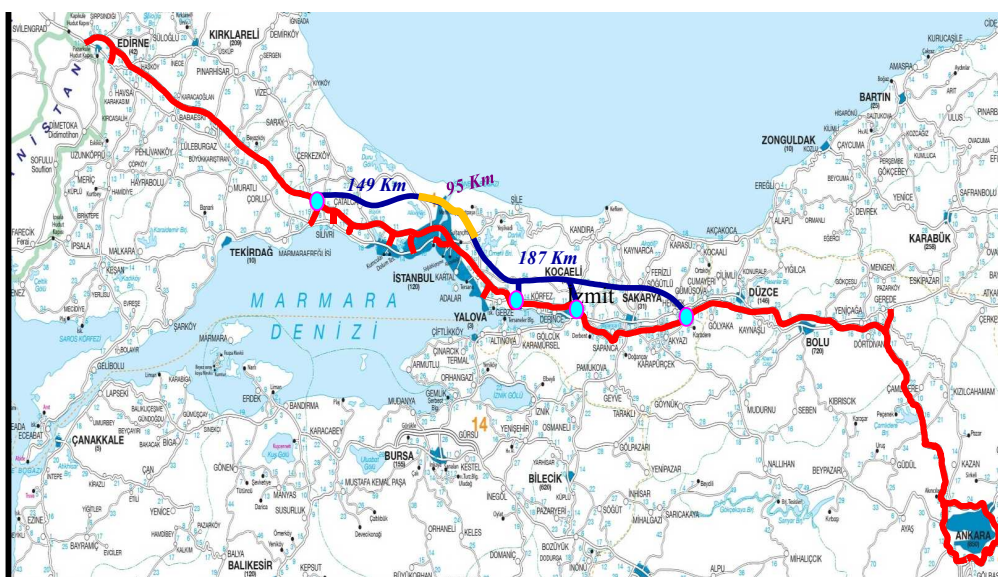




WORLDWIDE RANKING OF IMPORTANT BRIDGES



NORTHERN MARMARA MOTORWAY PPP PROJECT (European & Asian Parts - Tender Phase)



KINALI-ODAYERİ (LINK HIGHWAYS INC.) SECTION
149 KM (European Side)
Project Cost 1.75 Billion USD

KURTKÖY-AKYAZI (LINK HIGHWAYS INC.) SECTION
187 KM (Asian Side)
Project Cost 1.25 Billion USD

EXISTING MOTORWAY NETWORK



Our organization has launched a challenging and ambitious motorway construction program. With regard to this expedited motorway construction program, up to now, a motorway network with a length of 2282 km has been opened to traffic. Up to date, the total expenditure for motorway projects has been reached to approximately 20.5 Billion US \$ by the end of 2014.

MOTORWAYS IN OPERATION

2.282 Km



BOT PROJECTS UNDER CONSTRUCTIONS

535 Km

1-Gebze-Orhangazi-İzmir Motorway

433 Km

2-Sabuncubeli Tunnel

7 Km

3-a-North Marmara Motorway (YAVUZ SULTAN SELİM Cable Stayed Suspension Bridge) Odayeri-Paşaköy Section

95 Km

MOTORWAYS IN OPERATION
2.282 Km

BOT PROJECTS IN TENDERING PROCESS

336 Km

3-b-North Marmara Motorway Kınalı-Odayeri Section

149 Km

3-c-North Marmara Motorway Kurtköy-Akyazı Section

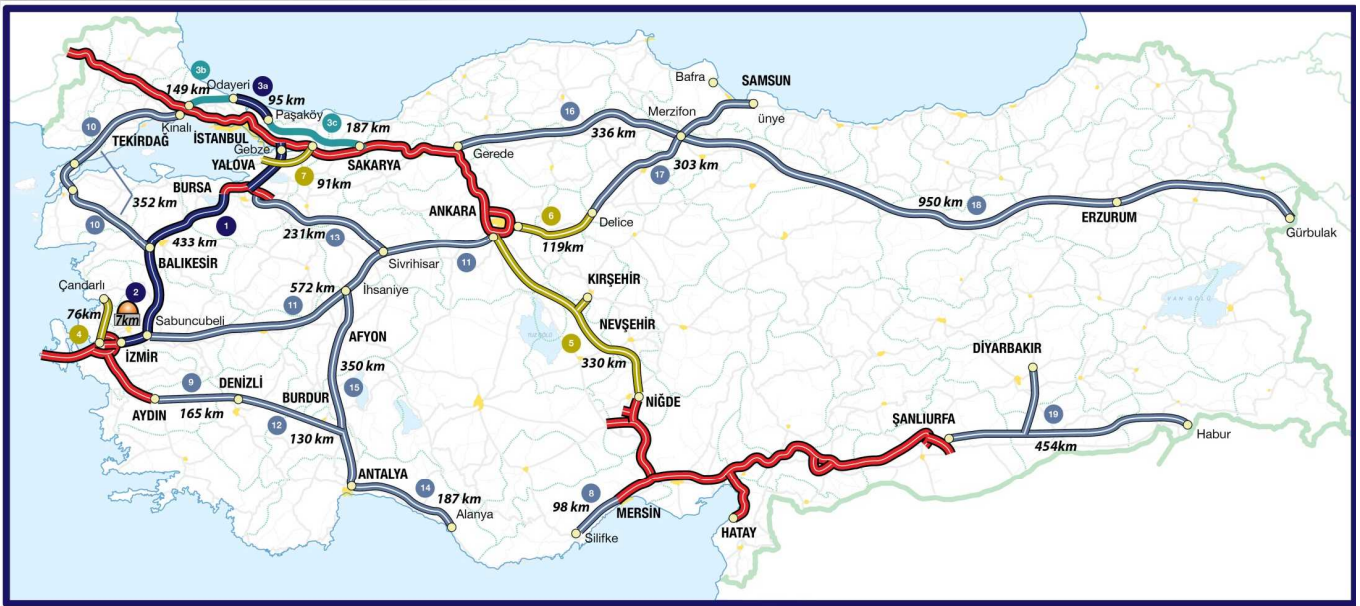
187 Km

**TARGET 2023 BOT PROJECTS (1.Group)****MOTORWAYS IN OPERATION :2.282 Km****TARGET 2023 BOT PROJECTS
(Under Construction) : 535 Km****TARGET 2023 BOT PROJECTS
(In Tendering Process): 336 Km****TARGET 2023 BOT PROJECTS (1. GROUP)****616 Km**

4-Çiğli-Aliğa-Çandarlı Motorway	76 Km
5-Ankara-Niğde Motorway (Including Kırşehir Connection)	330 Km
6-Ankara-Kırıkkale-Delice Motorway	119 Km
7-Yalova-İzmit Motorway	91 Km

**TARGET 2023 BOT PROJECTS (2. GROUP) 4.128 Km**

8-Mersin-Erdemli-Taşova Motorway	98 Km	14-Sivrihisar-Afyonkarahisar-Antalya-Alanya Motorway (Antalya-Alanya Section)	187 Km
9-Aydın-Denizli-Burdur Motorway (Aydın-Denizli Sec.)	165 Km	15-Sivrihisar-Afyonkarahisar-Antalya-Alanya Motorway (Afyon-Antalya Section)	350 Km
10-Kınalı-Tekirdağ-Çanakkale-Balıkesir Motorway (Including Strait Bridge)	352 Km	16-Gerede-Merzifon-Gürbulak Motorway (Gerede-Merzifon Section)	336 Km
11-Ankara-İzmir Motorway	572 Km	17-Delice-Samsun Motorway	303 Km
12-Aydın-Denizli-Burdur Motorway (Denizli-Burdur Sec)	130 Km	18-Gerede-Merzifon-Gürbulak Motorway (Merzifon-Gürbulak Section)	950 Km
13-Sivrihisar-Bursa Motorway	231 Km	19-Şanlıurfa-Diyarbakır-Habur Motorway	454 Km



TARGET 2023 MOTORWAY NETWORK

- MOTORWAYS IN OPERATION
- TARGET 2023 BOT PROJECTS (UNDER CONSTRUCTION)
- TARGET 2023 BOT PROJECTS (IN TENDERING PROCESS)
- TARGET 2023 BOT PROJECTS (1.GROUP)
- TARGET 2023 BOT PROJECTS (2.GROUP)

2 282 km
 535 km
 336 km
 616 km
 4 128 km

5.615 KM

MOTORWAY NETWORK : 7.897 KM

TOTAL COST : 55 BILLION \$

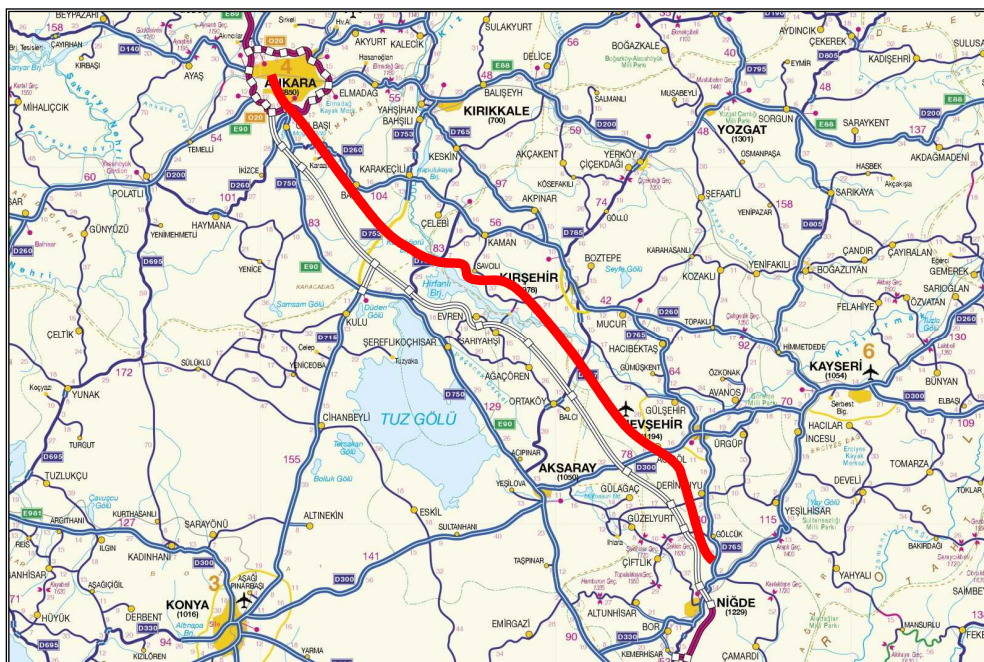
TOTAL: 7.897 KM



ROAD INFRASTRUCTURE & PPP PROJECTS FOR HIGHWAYS IN TURKEY



ANKARA-NİĞDE MOTORWAY (TARGET BOT PROJECT GROUP 1)

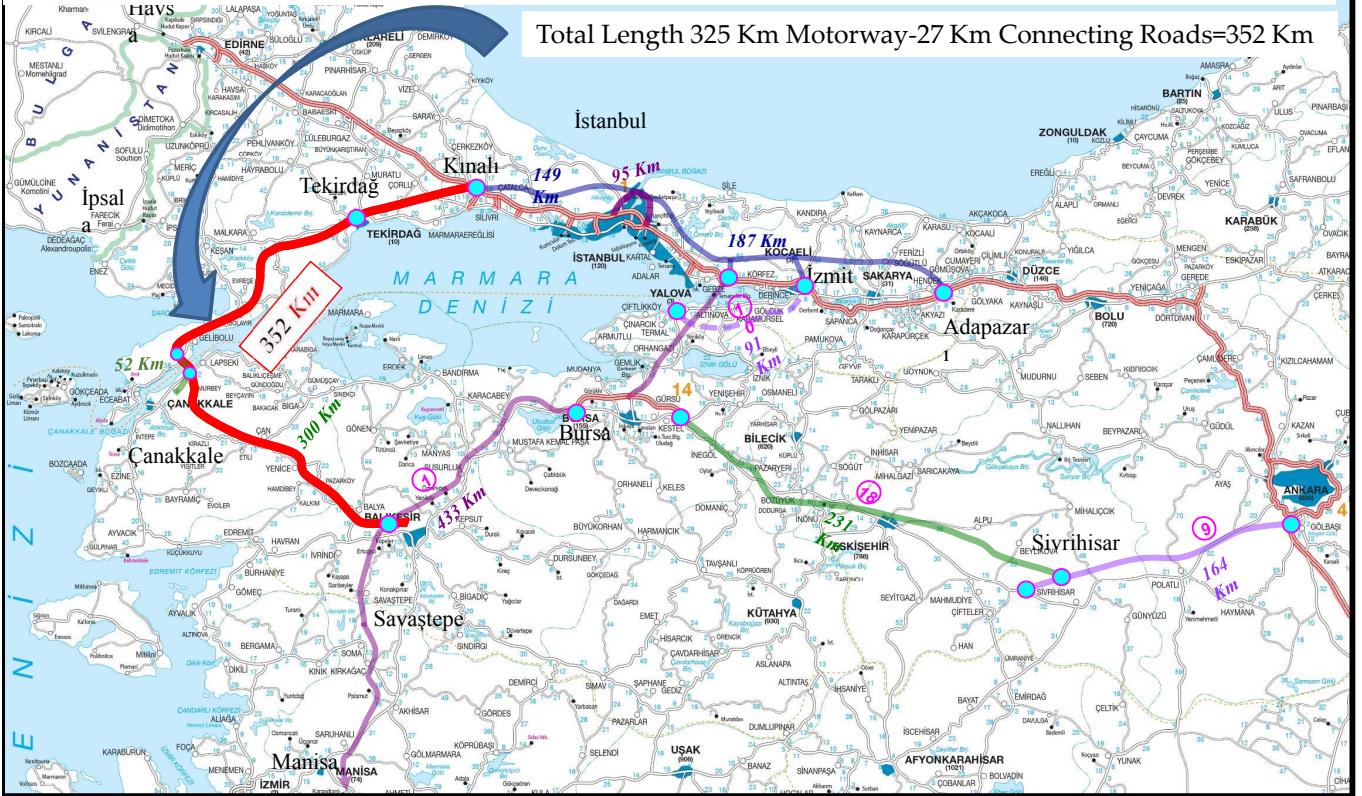


TOTAL LENGTH 330 Km (2x3 Traffic Lanes)

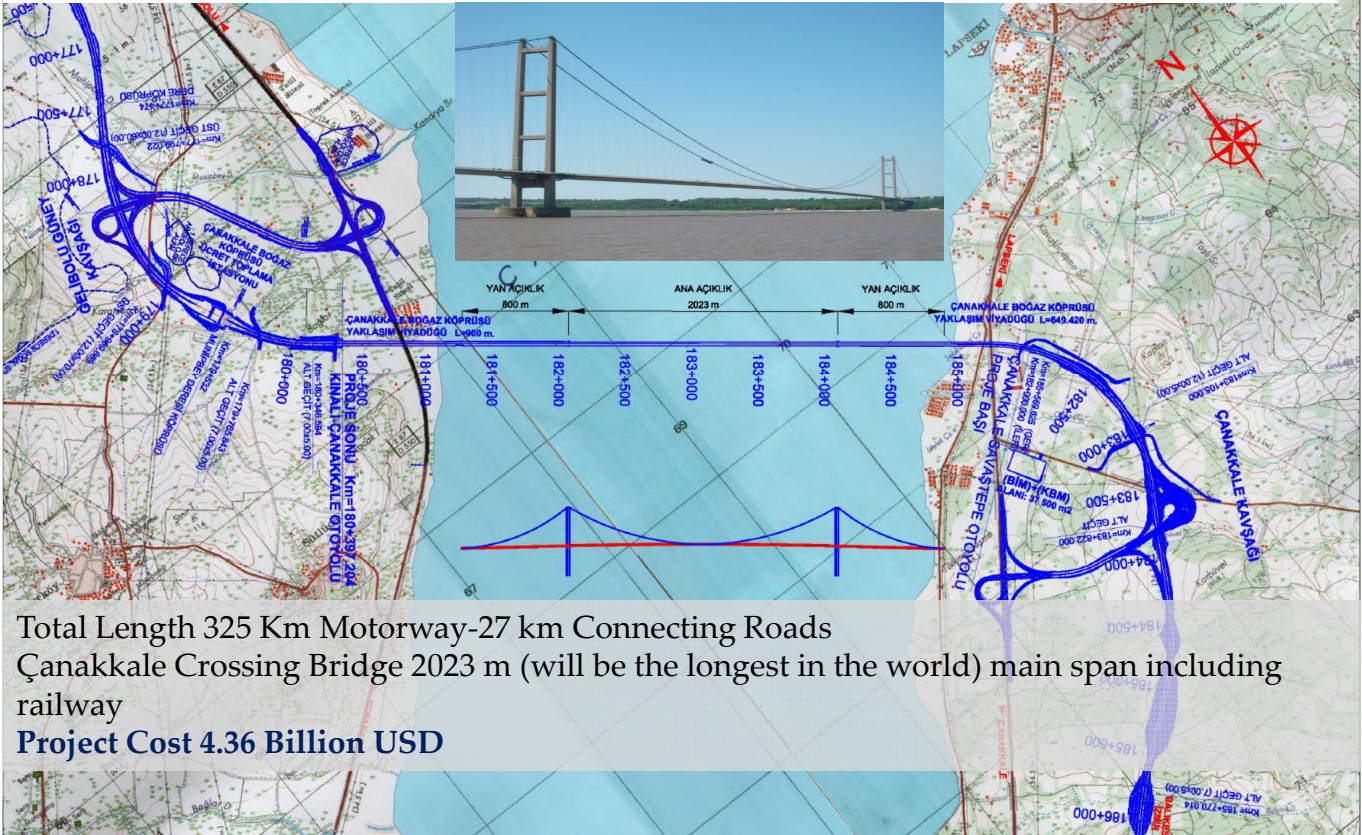
Project Cost 1.75 Billion USD



KINALI-TEKİRDAĞ-ÇANAKKALE-BALIKESİR MOTORWAY PROJECT (DARDANELLES BRIDGE INC.)



KINALI-TEKİRDAĞ-ÇANAKKALE-BALIKESİR MOTORWAY PROJECT (DARDANELLES BRIDGE INC.)





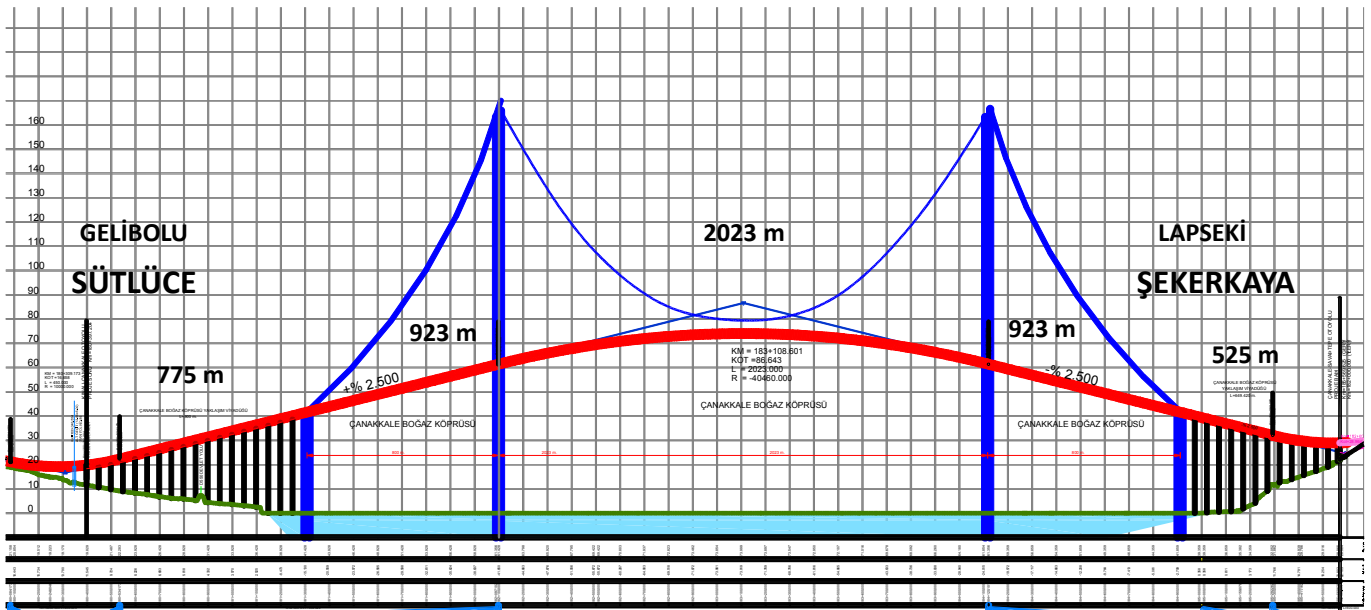
KINALI-TEKİRDAĞ-ÇANAKKALE-BALIKESİR MOTORWAY PROJECT (DARDANELLES BRIDGE INC.)

Technical Specifications

Motorway Length	325 km
Connecting Road Length	27 km
Suspension Bridge Length	3 623 m
Main Span	2 023 m
Approaching Viaducts	900+650 m
Number of Highway lanes	2x3
Number of Railway lanes	Single Lane



KINALI-TEKİRDAĞ-ÇANAKKALE-BALIKESİR MOTORWAY PROJECT (DARDANELLES BRIDGE INC.)



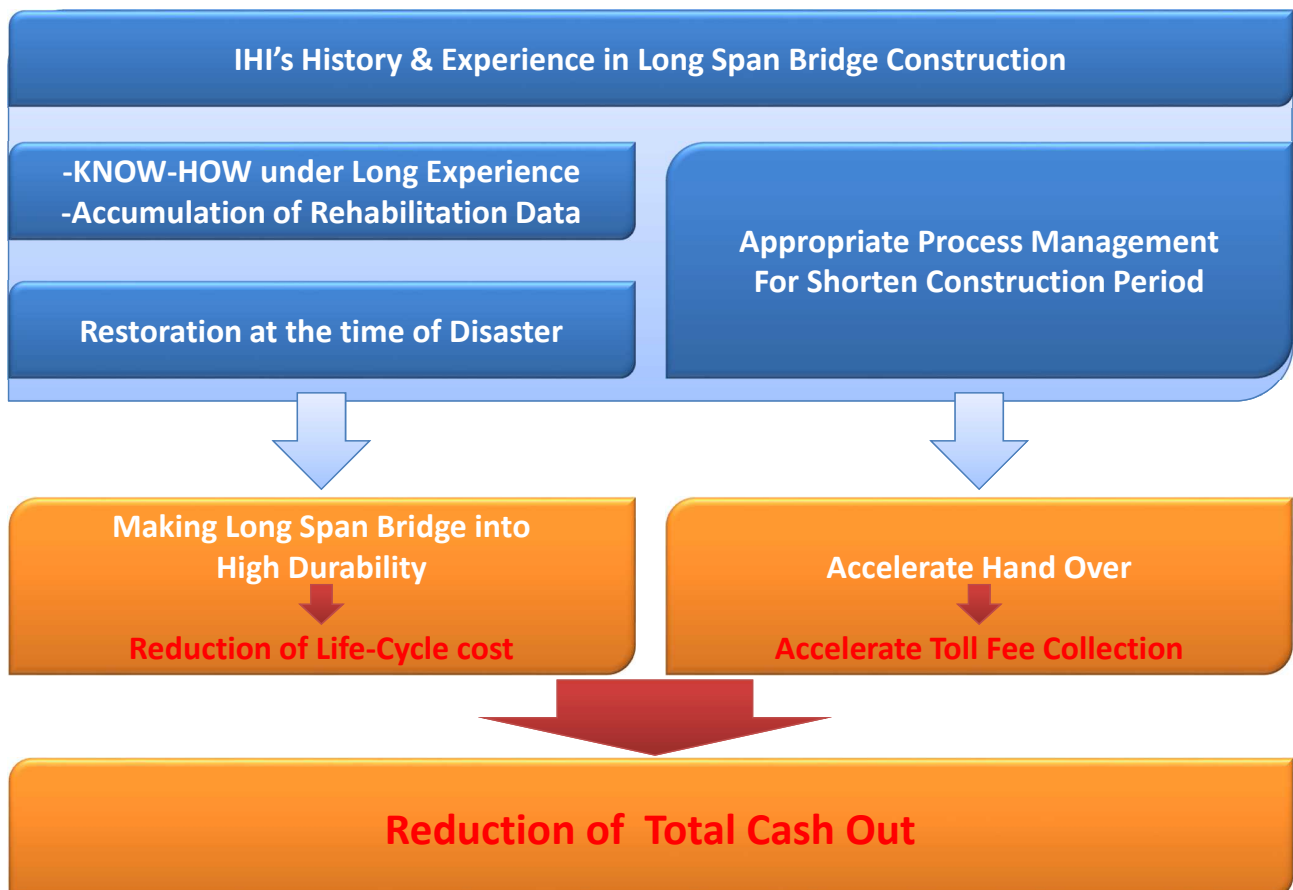
A night photograph of the Bosphorus Bridge in Istanbul, Turkey. The bridge's two massive towers are illuminated with a vibrant purple light, and the suspension cables are strung with small lights. In the foreground, the Ortaköy Mosque is brightly lit with a warm yellow light, its domes and minarets clearly visible. The bridge spans across the dark water of the Bosphorus Strait, with city lights visible on the distant shore. The sky is a deep, dark blue.

ご清聴ありがとうございました

M.Cahit TURHAN
General Director
General Directorate of Turkish Highways
Ministry of Transport, Maritime Affairs and Communications



IHI's Know-how in Long Span Bridge Construction



IHI's Major Experience in Long Span Bridge Construction

- Bridge Construction Experience Over 50 years (The year from Wakato Bridge Construction)
- IHI has High Level Standard in Safety, Quality, Environment & Durability with Advanced Design Skill & Technological Capabilities

Japan



Minami Bisan & Kita Bisan Seto Bridge
Jul.1982~Jun.1985
1,611m (Minami) 1,723m (Kita)



Rainbow Bridge
Jan.1987~Jun.1991
798m Center Span:570m

The Longest Suspension Bridge in the world



Akashi Kaikyo Bridge
Aug.1989~Mar.1998
3,911m Center Span:1,991m



Tataro Bridge
Jan.1994~Mar.1999
1,480m Center Span:890m

Overseas



2nd Bosphorus Bridge
Turkey
May,1985~Dec,1988
1,510m Center Span:1,090m



Irtysh River Bridge,
Kazakhstan
Apr,1998~Nov,2000
1,086m Center Span:750m



Nhat Tan Bridge
Vietnam
Oct.2009~Oct,2014
1,500m Center Span:300m x 4



The 4th Longest Suspension Bridge in the world

Izmit Bay Crossing
Turkey
Jan.2013~Feb.2016
Under Construction
2,682m Center Span:1,550m

KNOW-HOW under Long Experience Accumulation of Rehabilitation Data

- Construction Technologies of Cable Erection & Dehumidification System for Cable & Girder
- Research & Development of Wind & Seismic resistance Technologies

Technologies of Cable Erection

① PPWS Method



The cable erection of a suspension bridge has two methods - namely, the Air Spinning (AS) method and the Pre-fabricated Parallel Wire Strand (PPWS) method. IHI has developed and established know-how on both method. IHI pursue cost performance with regard to quality and local condition.

② Air Spinning (AS) Construction Method



Cable Rehabilitation Work



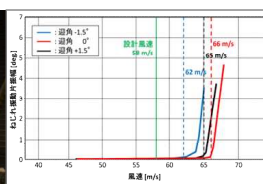
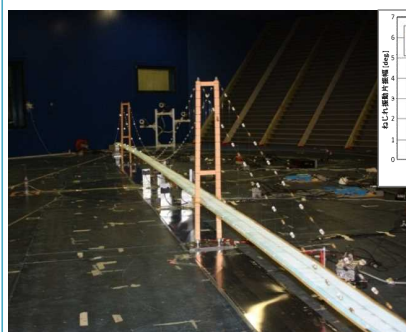
Dehumidification System



Utilize the Know-How from Inspection & Rehabilitation Work for Design & Erection of New Bridge

↓
Reduction of Life-Cycle cost

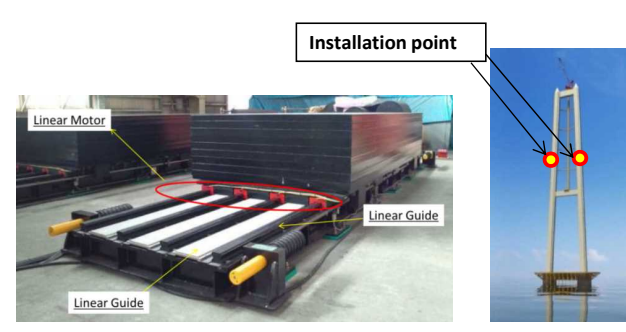
Wind Tunnel Testing Technology



Result of Wind Tunnel Test

- Design Wind Speed : 58 m/s
- Flutter Velocity Speed : 66 m/s

Anti-vibration device(Single-Axis Linear Model)



Restoration at the time of Disaster

▪ Immediate Restoration Construction at the time of a Large Scale Earthquake (Example; Great East Japan Earthquake : Arakawa Bayside Bridge)

Exchange of damaged installation components



Mechanism of the Destruction at the time of Earthquake



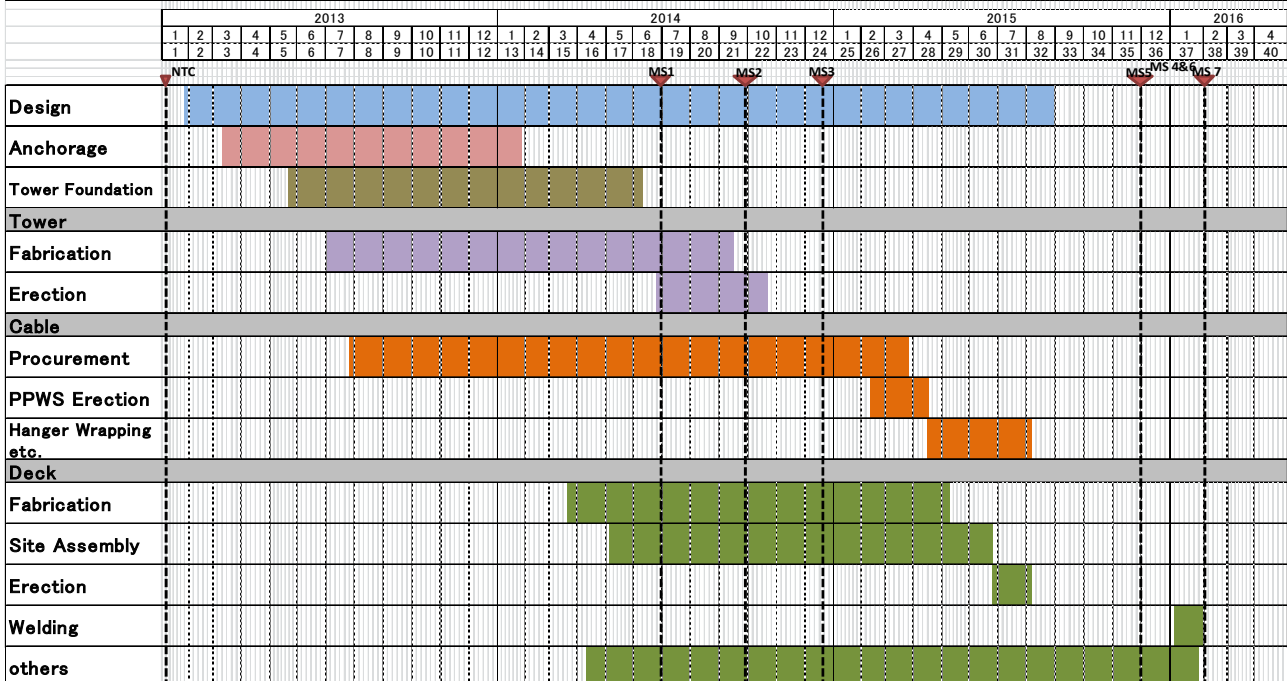
Utilize for Design (structural details) & Reinforcement Work of New Bridge

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5

Appropriate Process Management for Shorten Construction Period

COMPARISON OF BASELINE SCHEDULES REV3



- Timely Delivery
- Risk Management (Supplier selection, Risk hedge etc.)
- Rescheduling & Countermeasure against Accident

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Appropriate Process Management for Shorten Construction Period

• IHI has Know-How for Keeping & Shortening Construction Period

Programme of Major Suspension Bridge

Name of Bridge (Location)	Main Span (m)	Duration (month)	Construction Programme (month)												
			10	20	30	40	50	60	70	80	90	100	110	120	130
Akashi-Kaikyo Bridge (Japan)	1,991	122	[Construction bar from month 10 to 122]												
Great Belt East Bridge (Denmark)	1,624	80	[Construction bar from month 10 to 80]												
Izmit Bay Bridge (Turkey)	1,550	37	[Construction bar from month 10 to 37]												

Examples of Shorten Construction period

Name of Bridge (Location)	Main Span (m)	Contract Actual (month)	Shorten	Construction Programme (month)				
				10	20	30	40	50
Irtys River Bridge (Kazakhstan)	750	43	12 months	[Construction bar from month 10 to 43]				
		31		[Construction bar from month 10 to 31]				
Second Bosphorus Bridge (Turkey)	1,090	36	6 months	[Construction bar from month 10 to 36]				
		30		[Construction bar from month 10 to 30]				

Accelerate Hand Over



Accelerate Toll Fee Collection



Reduction of Total Cash Out

How the 3rd Industrial Revolution brings safety and comfort on Road Traffic?

Practices in Japan

13 March 2015

Koji KURODA

President

Japan Expressway International Co.Ltd.



Japan Expressway International Co., Ltd.

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4.Advanced ITS in the future

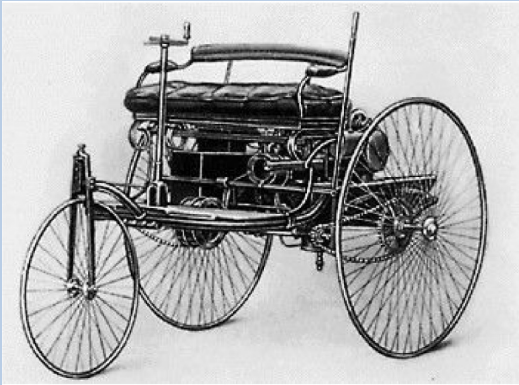


Japan Expressway International Co., Ltd.

2

1. Role of Road Traffic in 21st century

- The invention of internal-combustion engine propelled the 2nd Industrial Revolution and made a great contribution to **economic growth** in the second half of the 19th century and afterward.

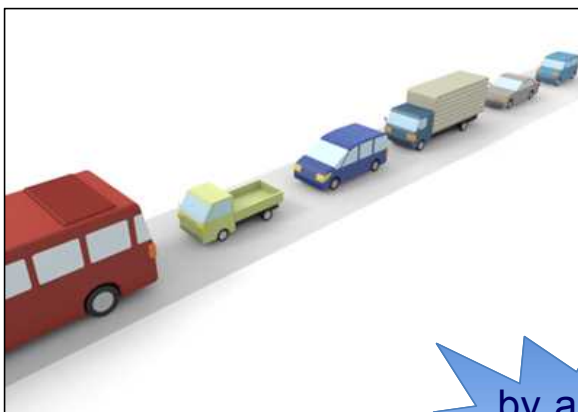


1885 Benz Tri-car with gasoline engine

- The 3rd Industrial Revolution in road sector in the 21st century should aim to **maximize the happiness** of the people by securing safety and comfort with information technology.

From GDP
to GNH

1. Role of Road Traffic in 21st century



Accidents
Congestion
Environmental loading.....

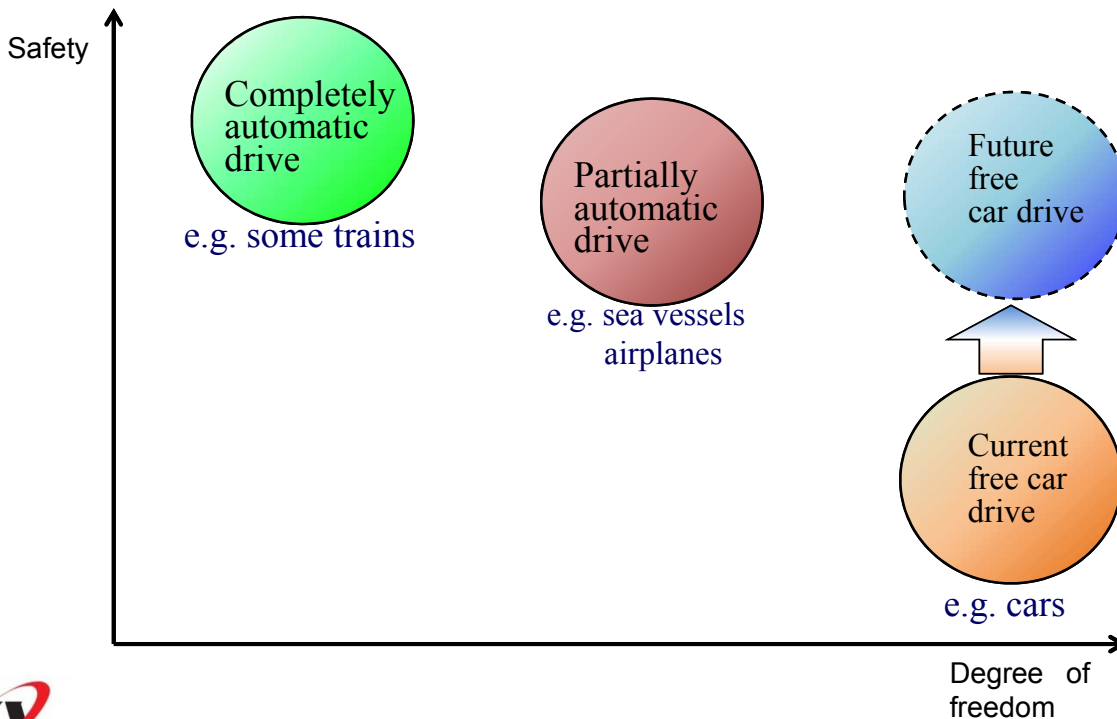
by applying IT
to cars and
roads

Safety & comfort



1. Role of Road Traffic in 21st Century

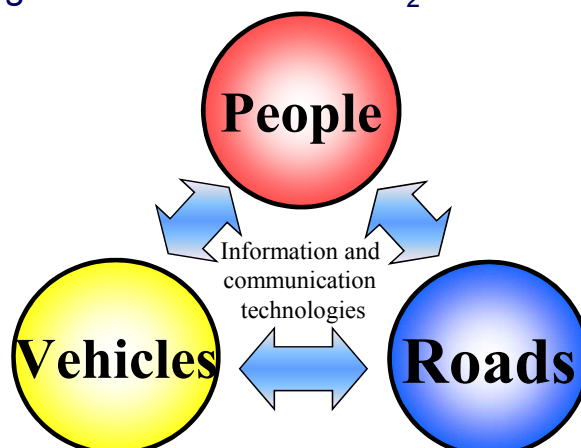
Drive Freely or Automatically in 21st Century?



2. Background of Introducing ITS in Japan

ITS is designed to integrate people, roads and vehicles in order to resolve road traffic problems such as traffic congestion, traffic accidents, environmental degradation and assets management..

- Traffic congestion time loss: 5 billion hours per year
- Traffic accidents : 660,000 accidents resulting in 4,400 fatalities(FY2012)
- Environmental degradation: 20% of all CO₂ emissions from transport sector



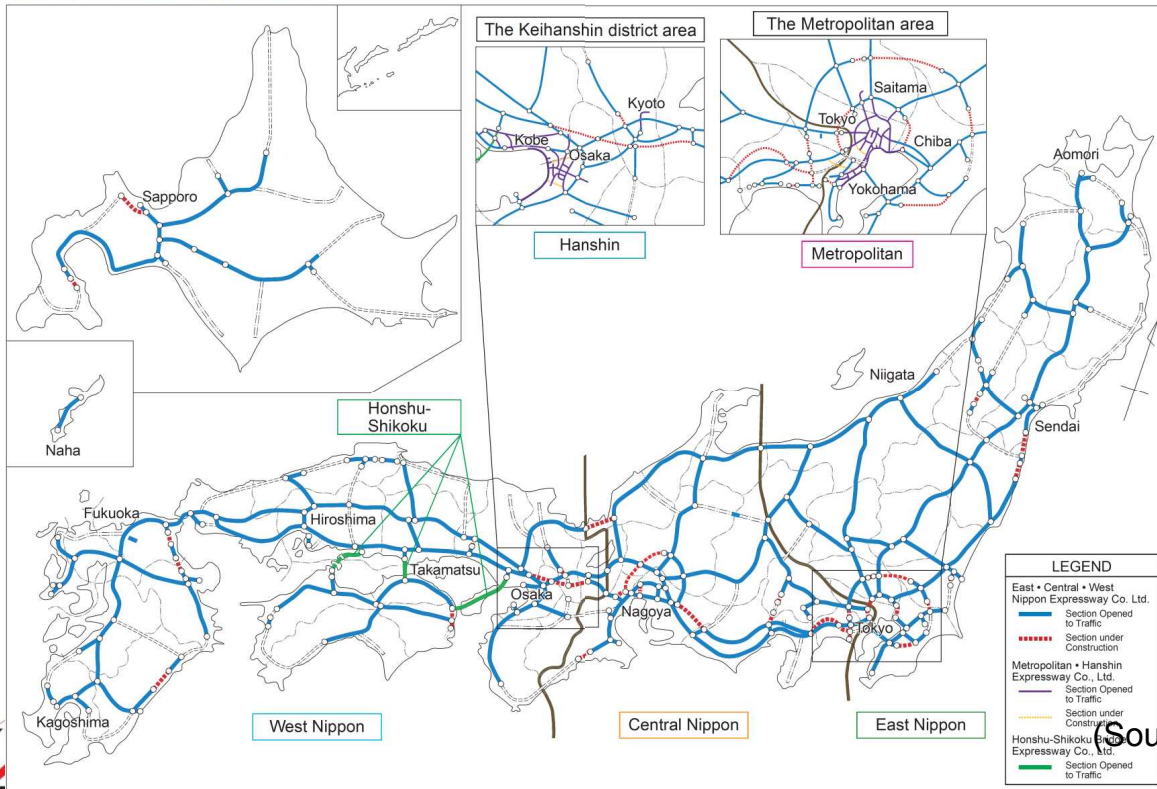
(Source:MLIT)



3. Actual Deployment of ITS

Over 10,200km Arterial High-standard Highway Network is in operation.

EXPRESSWAY NETWORK



(Source:JEHDRA)

As of September 1, 2012

3. Actual Deployment of ITS

① ITS/ICT Technology on Expressway Maintenance

- make full use of an ICT technique and check-up road assets effectively.
- maintain the assets in a healthy state several decades later.



Pavement inspection using High-Speed Road Measurement Vehicle

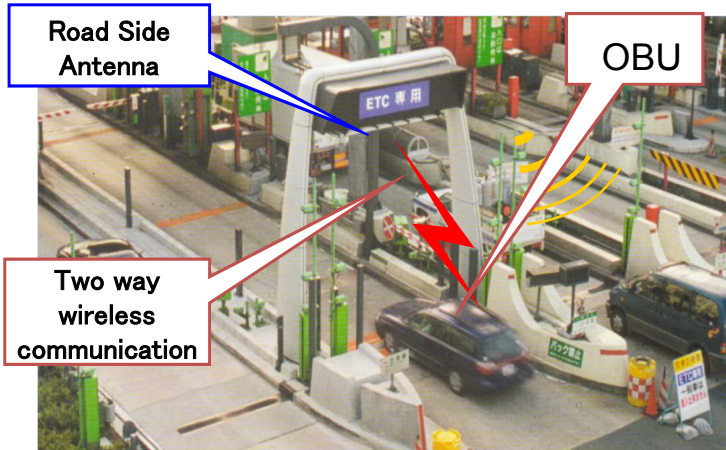


Tunnel inspection using High-Speed Concrete-crack Measurement Vehicle

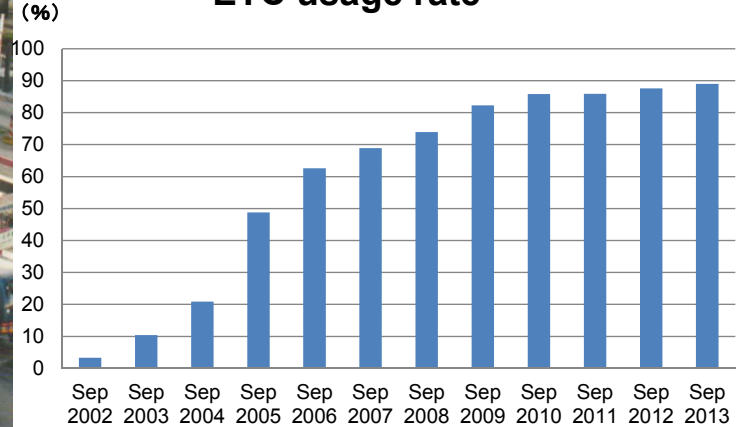
3. Actual Deployment of ITS

② ETC

- ETC is the single standardized system in all over Japan.



ETC usage rate

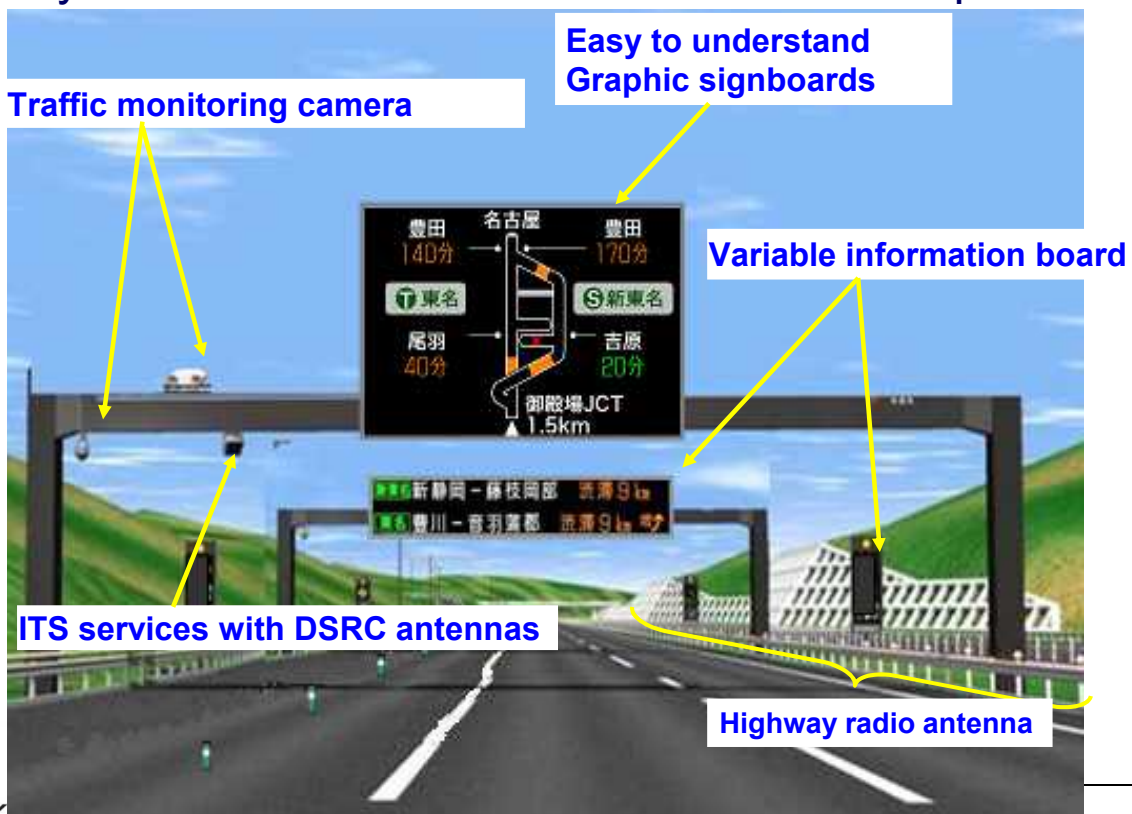


- ETC usage rate has reached approximately 90%.
- Almost all congestions at toll gates are gone. Besides, ETC reduces CO₂ emission by 220 thousand tons per year.



3. Actual Deployment of ITS

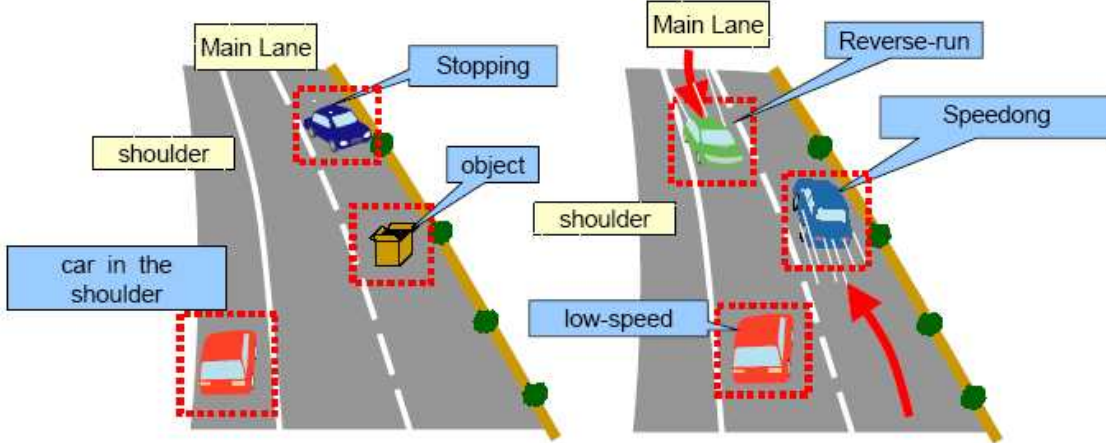
③ Variety of Information Provision Methods on Expressways



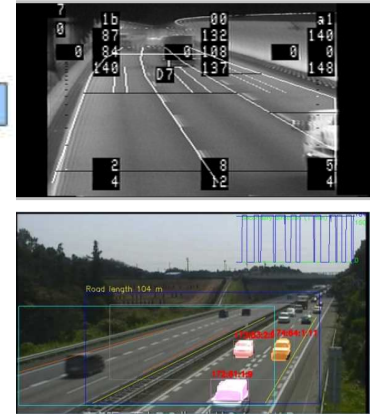
3. Actual Deployment of ITS

④ Monitoring Camera with Image Processing Technology

Detecting emergent events, situation of traffic (amount, speed and congestion etc) by camera image processing



Intended emergent events in the proving test



Detecting by image processing

Emergent events :

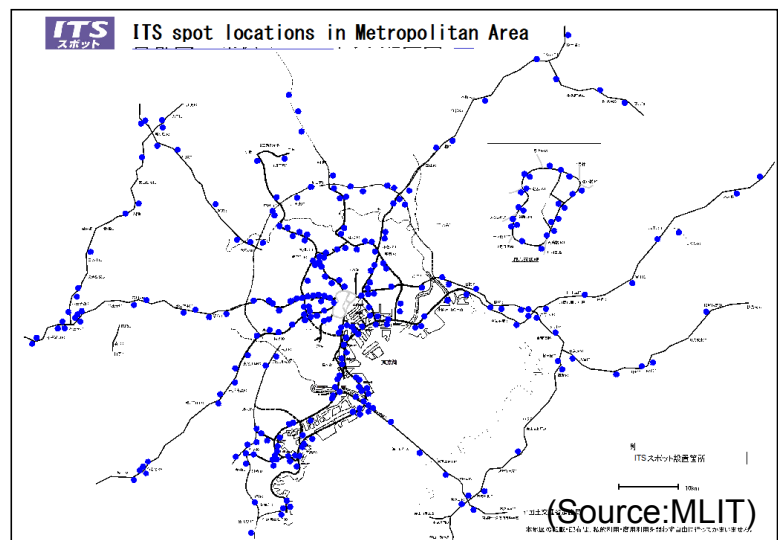
“Stopping”, “low-speed”, “evacuating-run”, “run on shoulder”, “fallen object”



3. Actual Deployment of ITS

⑤ ITS Spot Service

- Roads and vehicles are connected to each other via high-speed and large- capacity communication.
- 1,600 locations mainly on expressways throughout Japan.
- 10 million of compatible navigation system units by 2015



(Source:MLIT)



3. Actual Deployment of ITS

④ ITS Spot Service(continued)

Dynamic Route Guidance

- Provide wide-area traffic congestion data to enable car navigation systems to select routes smartly



Safety Driving Support

- Reduce close-call experiences by alerting drivers in advance



ETC

- Reduce congestion at expressway toll booths



Other services

- **Cashless payment** : e.g. Drive-through payment
- **Internet access**: Regional tourist and facilities information is available at roadside rest areas.



4. Advanced ITS in the future

-Auto Pilot System will make a great contribution to reduction of congestion, traffic accidents and environmental loading (by early 2020s).



The Future Times

Wednesday, October 29, 2055

Two men injured by a traffic accident on Atatürk Blvd. for the first time in the decade. A virus is detected in the OBU.

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.....
.....
.....





JOIN - Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development -

1. Who We Are
2. Our Target Infrastructure Projects
3. How We Function
4. Company Outline
5. Contact Us

March 2015

1. Who We Are

- JOIN (Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development) is the first and only government-private sponsored investment fund in Japan that is specialized in overseas infrastructure, covering from build-up to structuring O&M.
 - Together with Japanese private companies, we provide (i) equity, (ii) Japanese technology & system of the highest quality and (iii) technical & vocational training for human resource development in host countries.
 - In collaboration with the Japanese government, we will negotiate and coordinate with host governments to mitigate project risks and further attract private capitals.
- ⇒ We are “Hands-on Investment Fund” both for Japanese companies and host countries.

2. Our Target Infrastructure Projects

High-speed railroads



Urban railways / transport system



Toll Roads



Marine Logistic System



Port terminals



Airport terminals



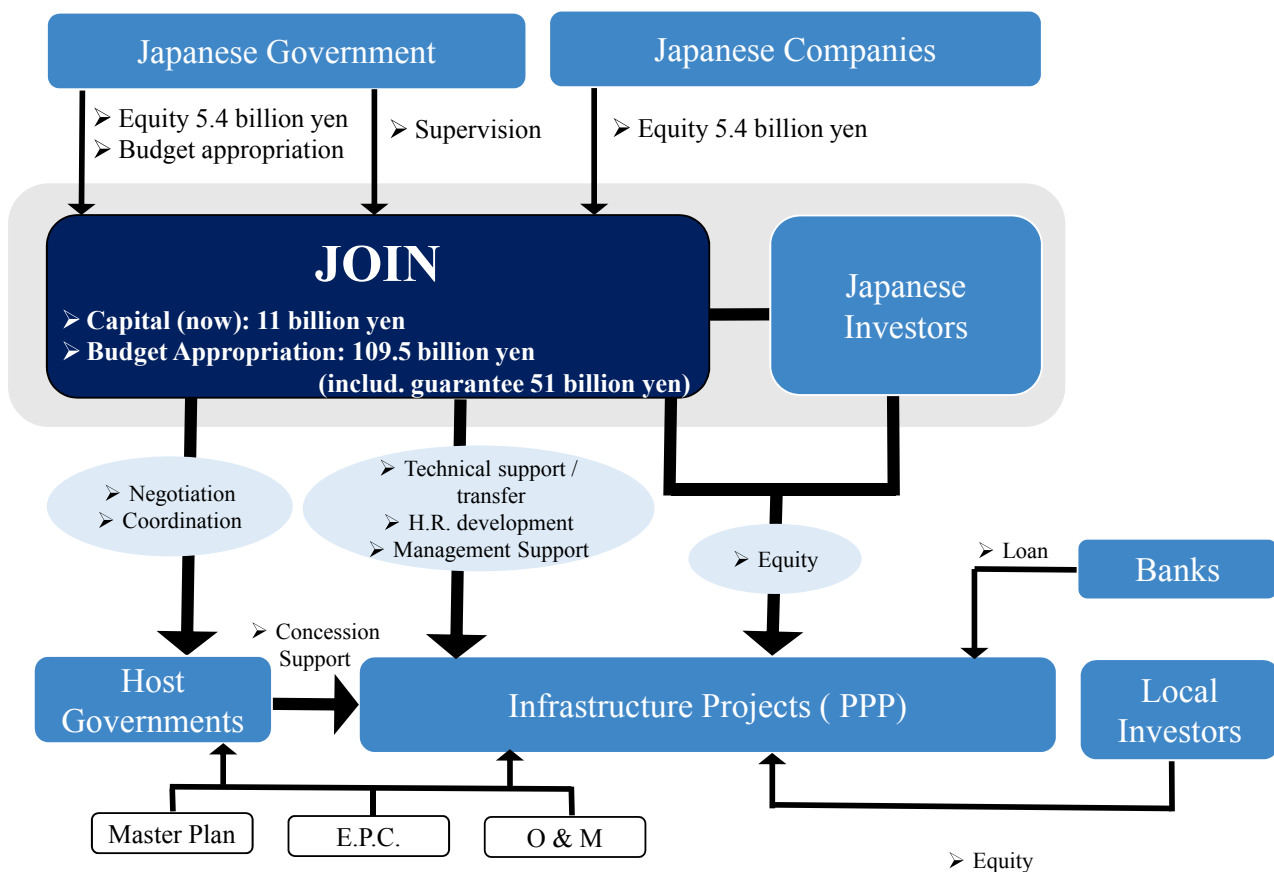
Urban development



The images are cited and modified from Ministry of Land, Infrastructure, Transport and Tourism documents and the website of Tokyo Metro Co., Ltd.

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3. How We Function



3

4. Company Outline

Company Name

Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development (JOIN)

Established

October 20, 2014

Investment
(as of Jan.2015)

10.7975 billion yen (government: 5.4 billion yen, private sector: 5.3975 billion yen)

List of private sector investors

- Service Center of Port Engineering
- Japan Conference on Overseas Development of Eco-Cities
- The Overseas Construction Association of Japan, Inc.
- Japan Railway Technical Service
- The All Japan Airport Terminals Association, Inc.
- Japan Dredging and Reclamation Engineering Association
- Japan Bridge Association
- The Japan Harbor Transportation Association
- The Japanese Shipowners' Association
- The Shipbuilders' Association of Japan (SAJ)
- Japan Road Contractors Association (JRCA)
- Japan Federation of Freight Industries
- The Association of Japanese Private Railways
- Japan Prestressed Concrete Contractors Association
- Japan Expressway International Co., Ltd. (JEXWAY)
- Sumitomo Mitsui Trust Bank, Limited. (account in trust)

Website

<http://www.join-future.co.jp/>
(Japanese version Only)

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5. Contact Us

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