Second Tokyo Bayshore Road Plan

Shousuke NAKAJIMA
Manager, Tokyo Wangan Road Survey Office
Kazunori KANNO
Manager, Planning Section, Tokyo Wangan Road Survey Office

Wangan 2

GREATER SPEED AND COMFORT

The waterfront around Tokyo Bay is an area densely packed with port facilities, physical distribution centers, large industrial plants, and various public facilities. With this concentration of functions, population has concentrated in the area, so it also suffers from overpopulation. Further, large-scale urban redevelopment efforts, such as the Tokyo Waterfront Subcenter, Makuhari Waterfront Subcenter, and Minato Mirai 21 (Port 21) projects, have recently been completed and various leisure facilities are now being planned for the area. Existing land is thus in heavy use, while further development is planned.

Road traffic in the coastal area between central Tokyo and the Chiba waterfront is particularly heavy, with about 400,000 vehicles per day passing between the two areas. This traffic is handled by the Tokyo Bayshore Road, the Keiyo Road, and Route 7 of the Metropolitan Expressway, all of which suffer from chronic traffic jams.

The Tokyo Bayshore (Wangan) Road was originally constructed as an arterial road to serve the waterfront area. Now, the need has arisen for another high-grade arterial road. The Second Tokyo Bayshore Road is an additional high-specification arterial road along the waterfront, and is designed to accommodate increasing traffic at high speeds in safety and comfort. It is expected to contribute to area-wide development by offering another link among the many subcenters along the waterfront.

ROUTE AND STRUCTURE OF WANGAN 2

The Second Tokyo Bayshore Road is known as WANGAN 2. The main route mostly consists of existing sections of road plus offshore sections. Onshore, the

route is trenched through residential areas. Offshore sections comprise a submerged tunnel under Sea Lane No. 1 close to Haneda International Airport, where there are air space limitations, a cable-stayed bridge with reduced-height main towers across Sea Lane No. 3, and other bridges with enough headroom for large vessels. The maximum design speed is 100 km/hr on the main route, which has 4-8 lanes. Access ramps comprise a further 4 lanes. The plan provides a spacious expressway offering comfort and driving ease.

METROPOLITAN EXPRESSWAY NETWORK

Part of a three-ring expressway network with nine radial links

A major cause of traffic congestion in the Tokyo metropolitan area is that traffic between peripheral centers passes through the central area. To reduce congestion, it is considered necessary to develop an expressway network in which radial roads link central Tokyo with peripheral centers and ring expressways connect the radial links. A network consisting of three ring expressways and nine radial links has been planned, and improvement work is now proceeding. WANGAN 2 forms part of this network, contributing to an improved arterial road network at the waterfront.

EFFECTS OF WANGAN 2

Construction of WANGAN 2 is expected to have the effects outlined below.

Reducing journey times and improving punctuality

Traffic congestion poses such problems as loss of punctuality, fuel wastage, and exhaust pollution. At busy times, it can now take an hour and forty minutes to make the round trip from Haneda International Airport to Chiba city, but this will be reduced to just one hour on the new route, a reduction of 40 minutes.

Decentralization of traffic

The highway follows a route closer to the bay than the existing Tokyo Bayshore Road, and is a segment of one of the ring expressways. This will move traffic away from central Tokyo and relieve congestion on nearby roads.

Bypass

As a link between Tokyo and Chiba prefecture, the new expressway will help to smooth traffic flows between the metropolitan area and Chiba Prefecture. Further, with a southward extension into Kanagawa prefecture planned for the future, further reductions in the traffic passing through central Tokyo will be seen.

Division of traffic

The existing Tokyo Bayshore Road is most suitable for medium and short journeys around the bay, while WANGAN 2 will accommodate inter-city traffic on longer trips between Tokyo, Chiba, and Kanagawa Prefectures. Thus, traffic will be divided onto routes best suited to particular destinations, offering greater convenience to those driving in the waterfront area.

Route choice

Drivers will have a choice between the Tokyo Bayshore Road and WANGAN 2 according to traffic conditions. The two roads mean that an alternative route is available in the event of emergency.

Linking urban facilities

A range of waterfront projects, including leisure facilities, are in the planning stage. The new route will provide better access, ease inter-regional access to cultural assets, and further expand the potential for regional development.

Fig. 1 Perspective of ETCS

Fig. 2 Perspective of a future VICS road

Fig. 3 Perspective of a bridge off Kasai

Fig. 4 Perspective of an offshore bridge

ITS ON WANGAN 2

Intelligent Transport Systems (ITS) along the new route will make the most of information and telecommunications technology through collaboration with the public, industrial, and academic sectors. By smoothing the flow of traffic and reducing congestion, these systems will enhance safety, efficiency, and comfort while contributing greatly to environmental preservation. The Ministry of Construction is working to introduce VICS (Vehicle Information & Communications System) throughout the country, bring the ETCS (Electronic Toll Collection System) into pilot operation as shown in Fig. 1, and carry out full-scale research and development of AHS (Automated Highway System).

Since it has junctions with a number of high-specification roads, WANGAN 2 will allow a free choice of routes according to traffic conditions, and the synergistic effect of introducing these advanced information systems will bring Tokyo the reality of safe, reliable, and efficient expressways. The world will experience a highly evolved information-based road system as illustrated in Fig. 2.

HARMONY WITH LOCAL CHARACTERISTICS

The Tokyo Bay waterfront area is currently undergoing a radical transformation as the balance of land use changes among port facilities, industrial works, and commercial, residential, and amusement facilities. Increasingly, it is providing local citizens with a place of recreation and relaxation. Along WANGAN 2 are areas used by Tokyo Disneyland, Tokyo Sea

Fig. 5 Perspective of a long bridge under illumination

Life Park, and Inage Seaside Park as well as commercial areas such as Makuhari Waterfront Subcenter, and waterfront residential complexes.

With such a variety of land use, it was important that the plan took into account visual harmony with each area's characteristics. In the vicinity of Tokyo Sea Life Park, for example, an offshore bridge is designed with an outline that reflects the horizon and to offer harmony with the sea and sky, as illustrated in Figs. 3 and 4. Further, cable-stayed bridges across sea lanes are designed in harmony with their surroundings; they also have observation platforms and are illuminated at night to provide a local landmark. The overall plan also includes amenities such as a marine fishing park with artificial reefs and a restaurant, as illustrated in Fig. 6. In this way, interesting leisure spots and service areas link the waterfront parks.

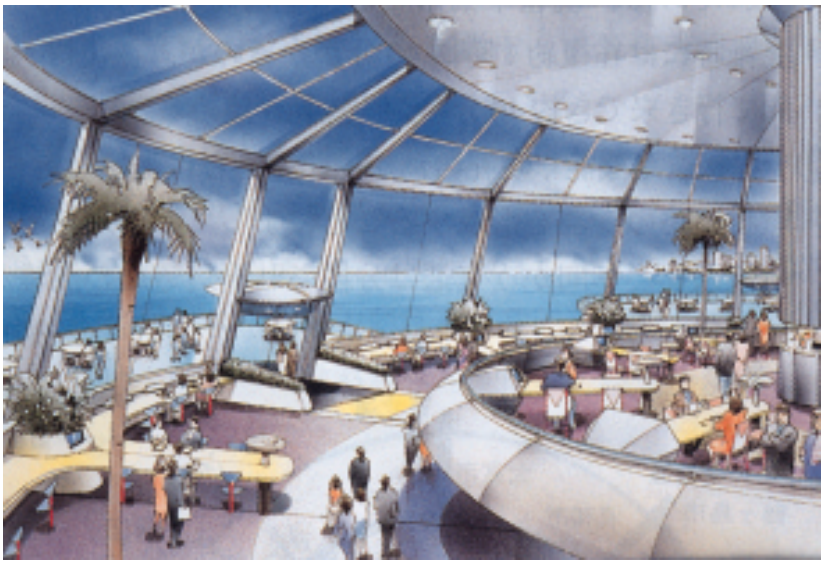

Fig. 6 Perspective of restaurant looking out over Tokyo bay

WANGAN 2 ALONG THE TOKYO BAY WATERFRONT

The Tokyo Bay waterfront is an area full of the promise of development in the 21st century. WANGAN 2 provides the area with a new arterial transport network for the coming century. Fast, efficient movement of passengers, freight, and information can be expected between the major projects planned in the area with nearby cities.