

## **Research about rational reconstruction method of the existing tunnel**

### **[ Point ]**

There has been increasing number of cases in which cross-section surface of the existing tunnel is enlarged in-service because of larger size of vehicles, increase in traffic volume, and aging. However, there are issues of high cost, long construction period, and need for lane closure for a long period of time. A study was conducted for rational and economical cross-section surface enlargement of the existing tunnel for solving such issues. As a result, multiple plans of construction method were suggested in which the cross-section surface of the existing tunnel could be economically enlarged under the condition of ensuring traffic (1 lane at least, and 2 lanes depending on the cases), and support structure for the tunnel with enlarged cross-section surface was suggested, with consideration to flow diagram for selecting cross-section shape that was suitable for the objective tunnels from size of the existing tunnel as well as lining condition and characteristics (ground stability and construction performance) of a tunnel with enlarged cross-section surface.

Keywords: existing tunnel, hot-line tunnel reconstruction, enlargement construction method of cross-section surface