

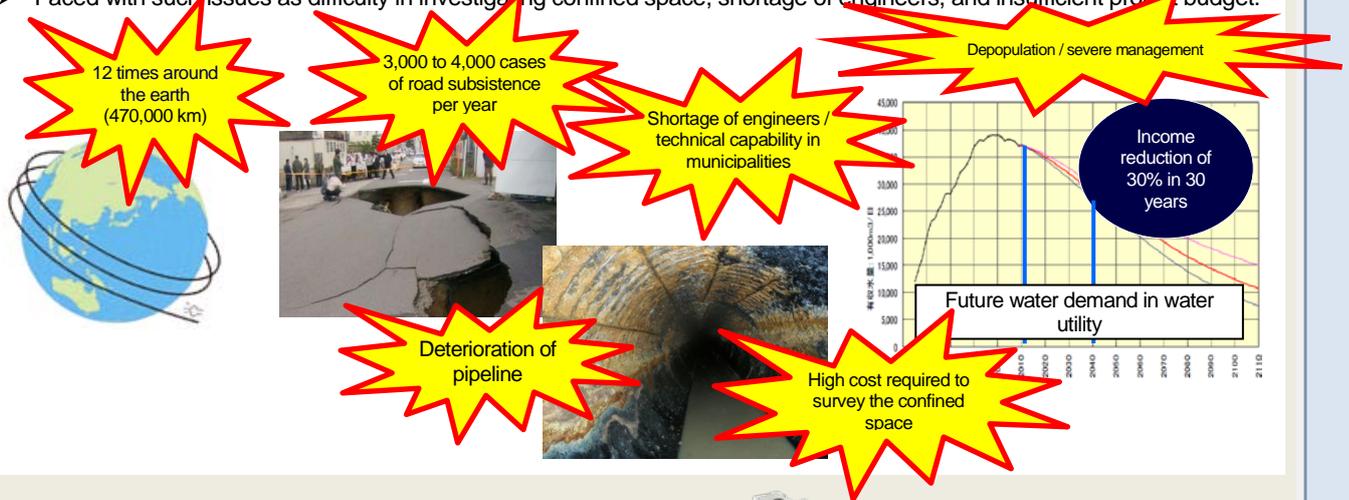
Protect the underground sewerage with a total length of 470,000 km

Water Quality Control Department

Japan has extensive sewer pipelines across the country with a length comparable to the distance 12 times around the earth (470,000 km in total). Then, in order to prevent accidents due to problems with old pipes that have been used over 50 years (corrosion, crack, joint displacement, cavity, etc.), such as road subsidence, we propose an efficient investigative technique expected to contribute to the reduction of the risk of failure.

Social background and issues

- Total length of sewer pipelines in Japan is comparable to the distance 12 times around the earth (470,000 km) and 3,000 to 4,000 cases of road subsidence accidents occur every year due to the deterioration of sewer pipelines.
- Faced with such issues as difficulty in investigating confined space, shortage of engineers, and insufficient project budget.



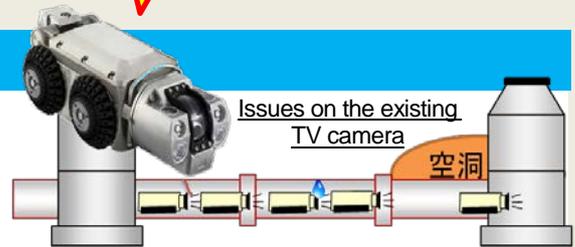
Content of study

Proposal of a method for efficient survey planning

Analyze the trend of deterioration due to such conditions as pipe properties and ground properties using the enormous survey data in NILIM (pipe type, pipe diameter, elapsed years, deterioration, etc.). Based on the results of analysis, establish a survey planning method and further enhance the efficiency of maintenance.

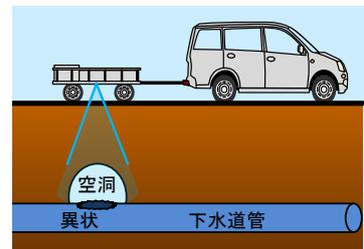
Support for technical development

- (1) Efficiency increase by reducing indirect work hours
Grasp the facility characteristics of existing pipelines (condition of crookedness, level difference, gradient change, etc.) and specify standards for the traveling performance of the TV camera equipped inspection device, which is required to enhance the efficiency of survey, and then provide the development targets to the manufacturer.
- (2) Promotion of dissemination by on-site demonstration
Demonstrate / evaluate on the site the technologies of private sector entities to survey sewer pipelines, including the technology to detect cavities efficiently on the outer side of the pipe due to pipe defect (cavity probing), and support increase in dissemination of such technologies.



短い調査日進量 (300m/日) → 技術開発支援①
 高額な調査単価 (2千~3千円/m) → 技術開発支援①
 管外側の空洞は発見不可能 → 技術開発支援②

Evaluate the possibility of introducing cavity probing technology



Achieve both reduction of national burden and provision of sustainable public service.
 Prevent road subsidence and malfunction resulting from sewerage.

☞ Related article is as follows.

Analysis of the Trend of Abnormalities in Sewer Pipelines Contributing to Stock Management