

# Development of introduction and evaluation methods for promoting further utility pole removal

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## 1. Introduction

With the goal of improving disaster prevention properties of roads, ensuring safe and pleasant traffic spaces, creating beautiful scenery, and tourism development, we have promoted the removal of utility poles from roads by placing electrical power lines underground. The NILIM is conducting verification tests to solve technical problems, leading to cost reductions, while simultaneously researching policies and technical trends abroad, in order to promote the removal of utility poles from road. In this document, we introduce an outline of these activities.

## 2. Low cost utility pole removal methods

We are considering various technical problems to reduce the cost for the introduction of buried electric cables. To verify the impact on road functions and electric supply and communication functions when electric cables and others are placed inside pavement at shallower levels than the conventional cases, we conducted accelerated loading tests, and checked for cable damage (see Photo 1). The results were incorporated into the intermediate report of the "State of Deliberations by the Low Cost Utility Pole Removal Methods Technology Study Committee"<sup>1)</sup>, which was released in December 2015. We are continuing to research problems that occur during construction, including the development of a confirmation method for buried objects.

## 3. Evaluation indicator of utility pole removal corresponding to policy purpose

Because there are a large variety of effects produced by utility pole removal, we have to evaluate these effects quantitatively in relation to the policy purpose. As the first step, we set individual evaluation indicators for three policy purposes: the improvement of disaster prevention, formation of landscapes and tourism development, and ensuring safe and comfortable traffic spaces. We are considering how to evaluate the achievement level.

## 4. Research on cost reduction technology and policy

## abroad

Internationally, both developed countries of Western Europe and America (see Photo 2) and major cities in Asia have promoted utility pole removal. Previously in Japan, Cable Box (CAB) system lines and utility ducts have been adopted. In foreign cities, the install-without-pipe/duct method has been adopted. We are researching the current activities and technologies for cost reductions in those cities, such as the cable burying criteria (install-without-pipe/duct, install depth, etc.) and burying techniques (digging, laying, burying, backfill, etc.).

## 5. Closing remarks

In order to promote the utility pole removal, we will continue to conduct activities to establish technologies to reduce costs and a project effect evaluation method in the future.

[Reference]

1) State of Deliberations by the Low Cost Utility Pole Removal Methods Technology Study Committee, <http://www.nilim.go.jp/lab/ucg/koho/index.html>



Photo 1: Checking damage to underground cables



Photo 2: underground cables in London