行政院農業委員會水土保持局
Soil and Water Conservation Bureau, COA

2023 TAICHUNG TAIWAN INTERPRAEVENT

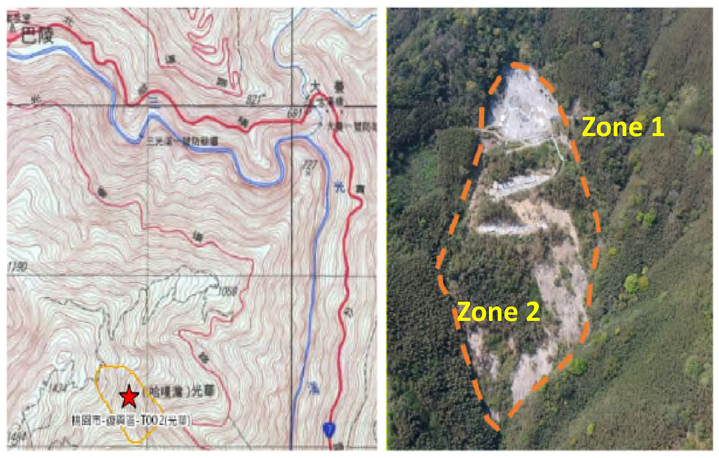
The First Complete Record of a Large-Scale Landslide Process in Taiwan
The SWCB Provides Open Data for Various Applications

Taoyuan City-Fuxing District-T002(Guanghua) Potential large-scale landslide area

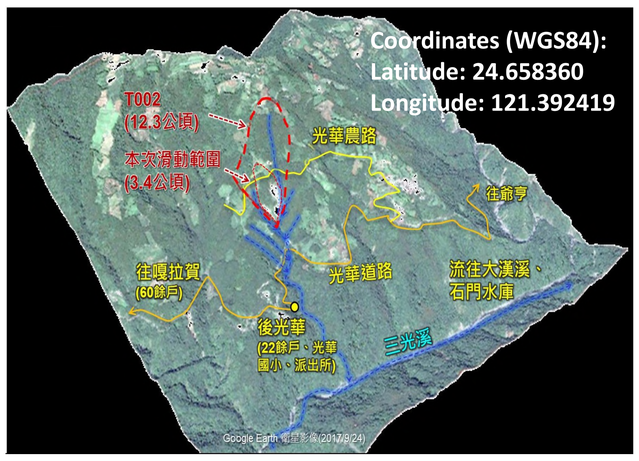
- Since early 2021, the potential large-scale landslide area located in Taoyuan's Fuxing District, identified as "Taoyuan City-Fuxing District-T002," has experienced significant movement. The SWCB immediately implemented disaster prevention measures, including the deployment of various advanced monitoring instruments and the high-frequency use of unmanned aerial vehicles to capture over 50 orthoimages, recording the complete process of the landslide mass movement.
- This case is the first complete record of large-scale landslide movement in Taiwan, and it’ s also a rare case internationally.

Location and Area

- Since 2018, the SWCB has been conducting on-site investigations, gradually establishing various on-site monitoring equipment, and including the potential large-scale landslide area.
- The potential area covers 12.3 hectares, of which approximately 3.4 hectares experienced accelerated sliding due to collapses in 2021. This resulted in the interruption of Guanghua Farm Road, which is located at the head of the collapsed area, and has affected the traffic safety of Guanghua Road below the landslide area.
- The terrain of the Guanghua landslide area gradually slopes from west to east, with a generally eastward-facing direction. The slope gradually becomes steeper as it goes downward, with the upper slope (zone 1) having a gentler slope of approximately 20 to 30 degrees, and the lower slope (zone 2) having a steeper slope of approximately 30 to 55 degrees. At the front edge of the slope, the terrain becomes relatively lower and forms a valley with a constricted shape.



Map of the Location and Aerial View of the Potential Area for Large-scale Landslide in T002 (Guanghua), Fuxing District, Taoyuan City



Topographic Map of the Potential Area for Large-scale Landslide in T002 (Guanghua), Fuxing District, Taoyuan City

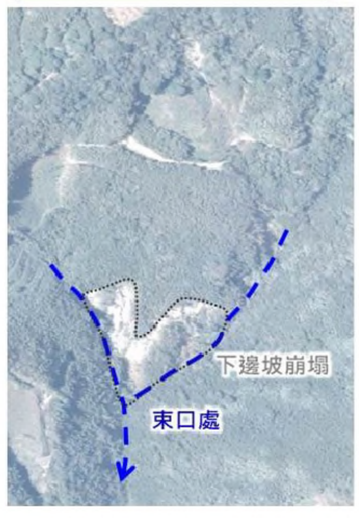
Environmental Disasters and History

Historical Disasters in the Potential Area for Large-scale Landslide in T002 (Guanghua), Fuxing District, Taoyuan City

Slope Displacement Acceleration



- Landslide on both sides with erosion groove patterns
- No bare exposure or landslide on the upper and lower slopes



- Significant landslide and bare exposure on the lower slope after Typhoon Jangmi
- Downhill movement on the first phase agricultural road on the upper slope



- Continuous downhill movement on the upper slope agricultural road
- Continuous expansion of bare exposure on the lower slope
- The first phase access road was opened on the upper slope due to the construction of a water collection pipeline



- Continuous downhill movement on the upper slope agricultural road
- Continuous expansion of bare exposure on the lower slope
- Both the first and second phase access roads were opened on the upper slope due to the construction of a water collection pipeline.

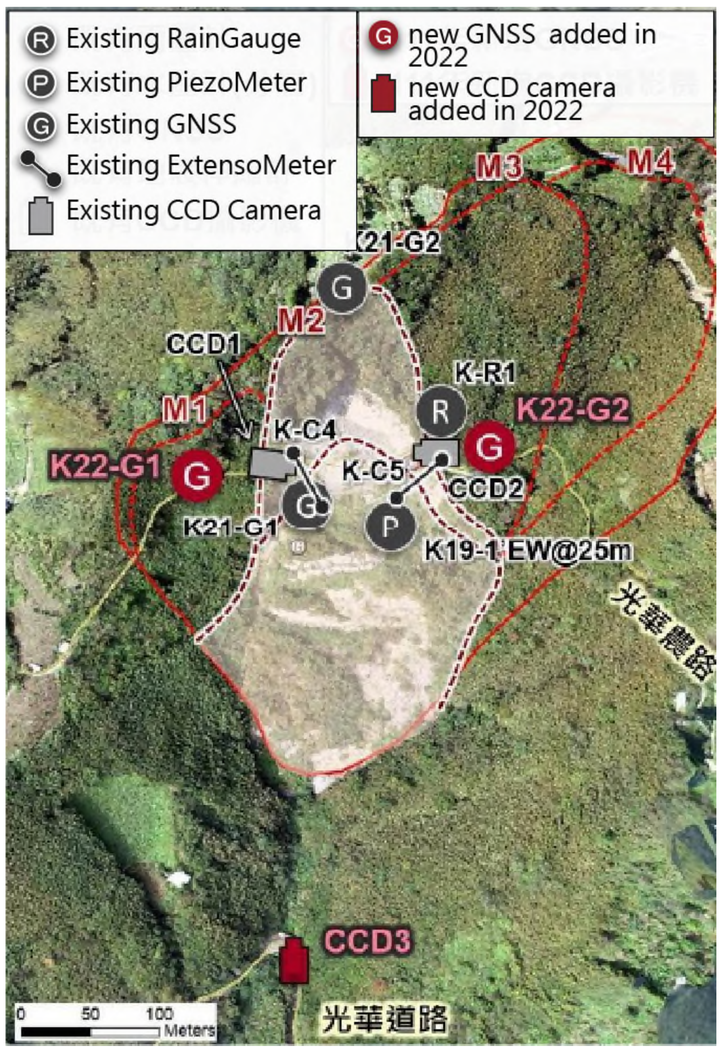


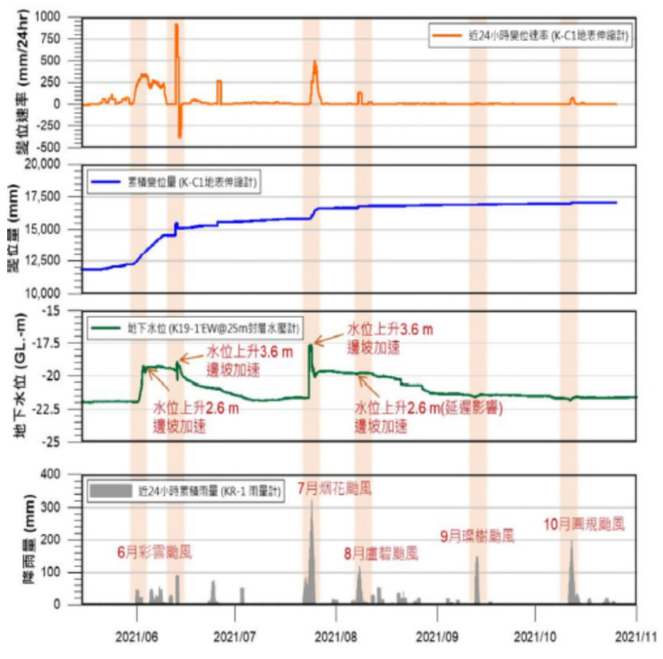
- Continuous downhill movement on the upper slope agricultural road and construction access road
- Continuous expansion of bare exposure on the lower slope



- Continuous downhill movement on the upper slope agricultural road and construction access road
- Downhill movement and expansion of bare exposure on the lower slope
- Boundary pushing on both sides of the lower slope

Monitoring Instruments, Configuration, and Monitoring Results





Open data platform for large-scale landslide information

- To facilitate the use of large-scale landslide observation data and UAV orthoimages by various sectors, promote data circulation, sharing, and value-added applications, the Soil and Water Conservation Bureau has opened up the large-scale landslide data.
- All types of diverse heterogeneous data are circulated and shared internally and externally through the Soil and Water Conservation Bureau's Data Management Platform (https://data.swcb.gov.tw/) through a single window.
- Related data is provided upon request. As long as you log in with a Google account, you can apply online and download the data. Everyone is welcome to use it.

Welcome everyone to make use of this service.

You can download it by applying online.

>Please scan the QR code.

https://data.swcb.gov.tw/FieldSurvey/Landslide