

Geospatial Technologies Integration for Water Resources Management in Taiwan



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Outlines

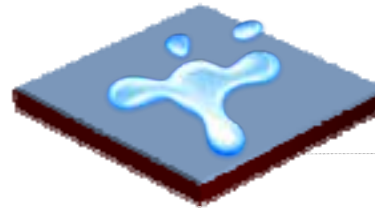


- Water Resource Protection
- Problem Statements
- System Architecture
- System Demo
- Conclusion

Water Resource In Taiwan



- 75% mountain area



- rush river flows



- steep topography



- vulnerable geological structure



- Taiwanese government faces a problem, namely, how to effectively manage these reservoirs



- Taipei water resource district is located at the southeast of Taipei, Taiwan.
- The area is 717 square kilometers and supplies the civil water for **5 million** residents
- Goal :
Effectively manage water resource



Problem Statements



Problem

Role



People

- Where is my home?
- Is my home on sensitive area?
- What sensitive area are near my home?
- I want to know the rainfall in this typhoon.
- ...



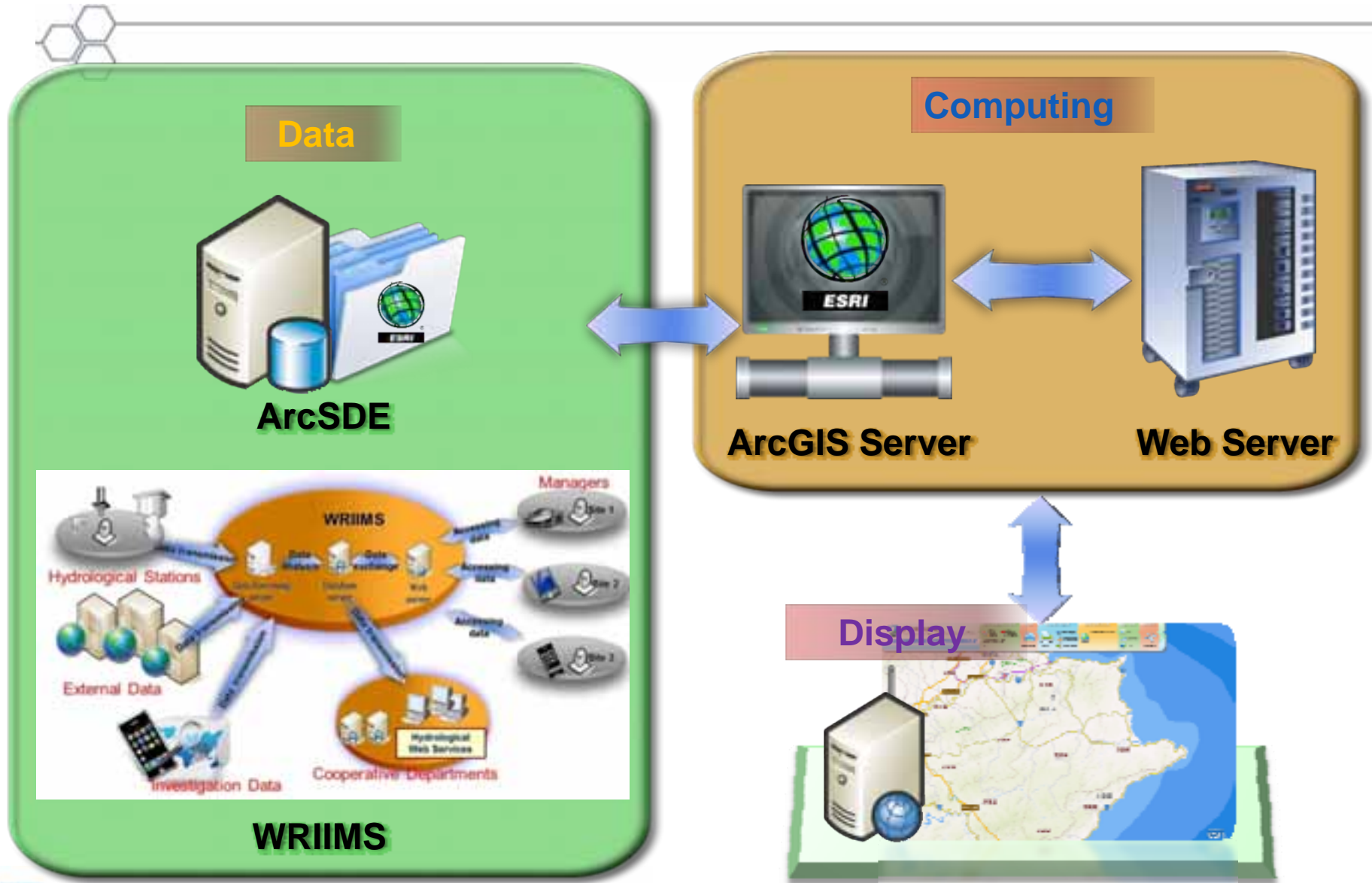
Manager

- How is water quality and rainfall in this moment?
- Are anybody live near sensitive area?
- I want to know the monitor stations data and other divisions data. It can help us to decision.
- ...

We need to solve

- Real-Time Data
- External Data
- Sensitive Area
- Address

Architecture

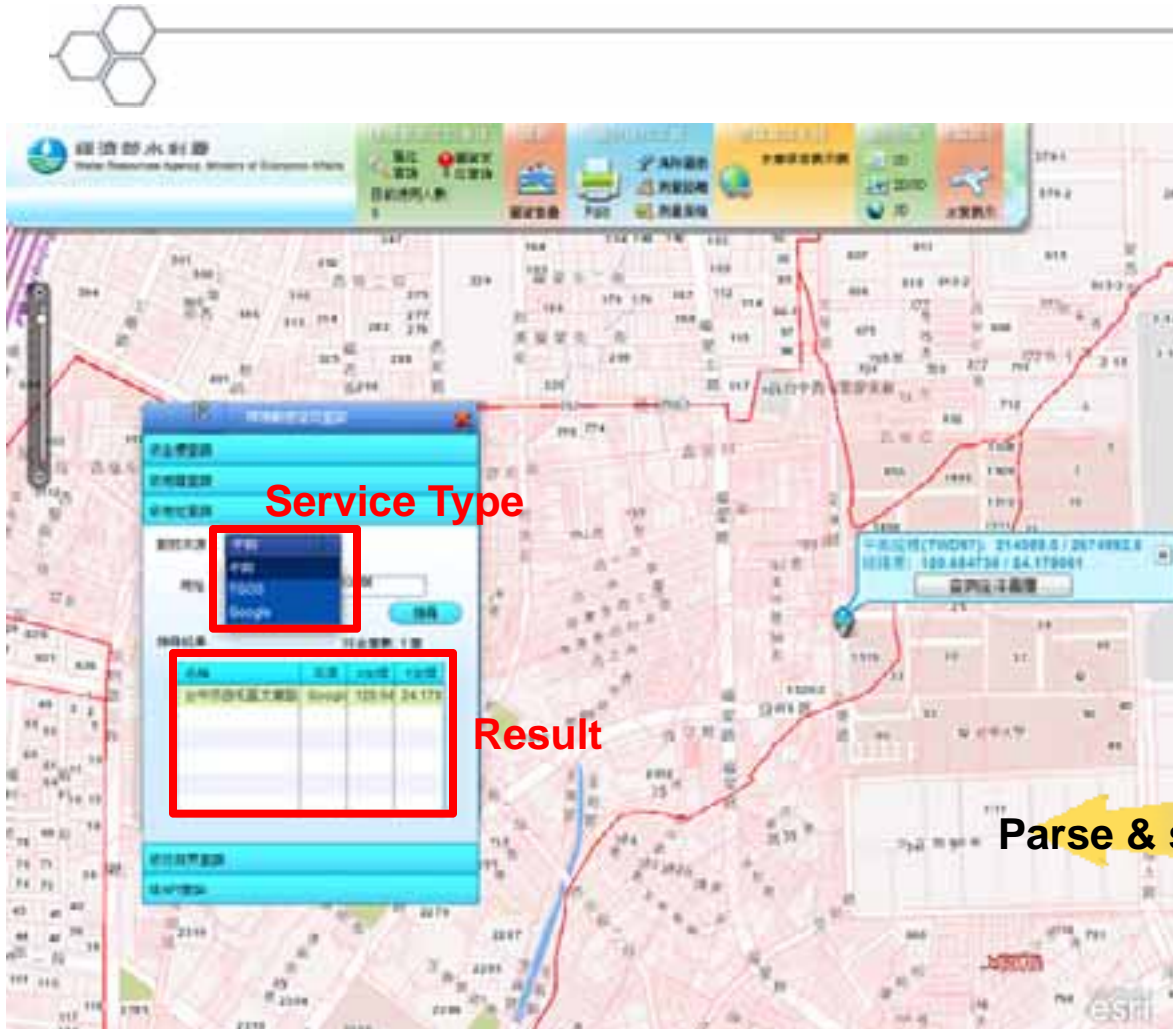


System Function

The screenshot displays a GIS application interface for water resource management. The top toolbar includes various icons for navigation and data manipulation. The map shows a city area with several water-related features overlaid in different colors: a purple line, a yellow line, and a blue line. Four numbered callouts are overlaid on the right side of the map:

- 1 Sensitive Query (Red diamond)
- 2 Layer (Green diamond)
- 3 2D/3D Mode (Blue diamond)
- 4 Water Data Display (Orange diamond)

Locating the address



Address Source :

- **TGOS**
- **Google**

Location :

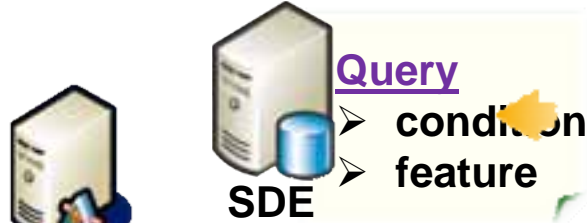
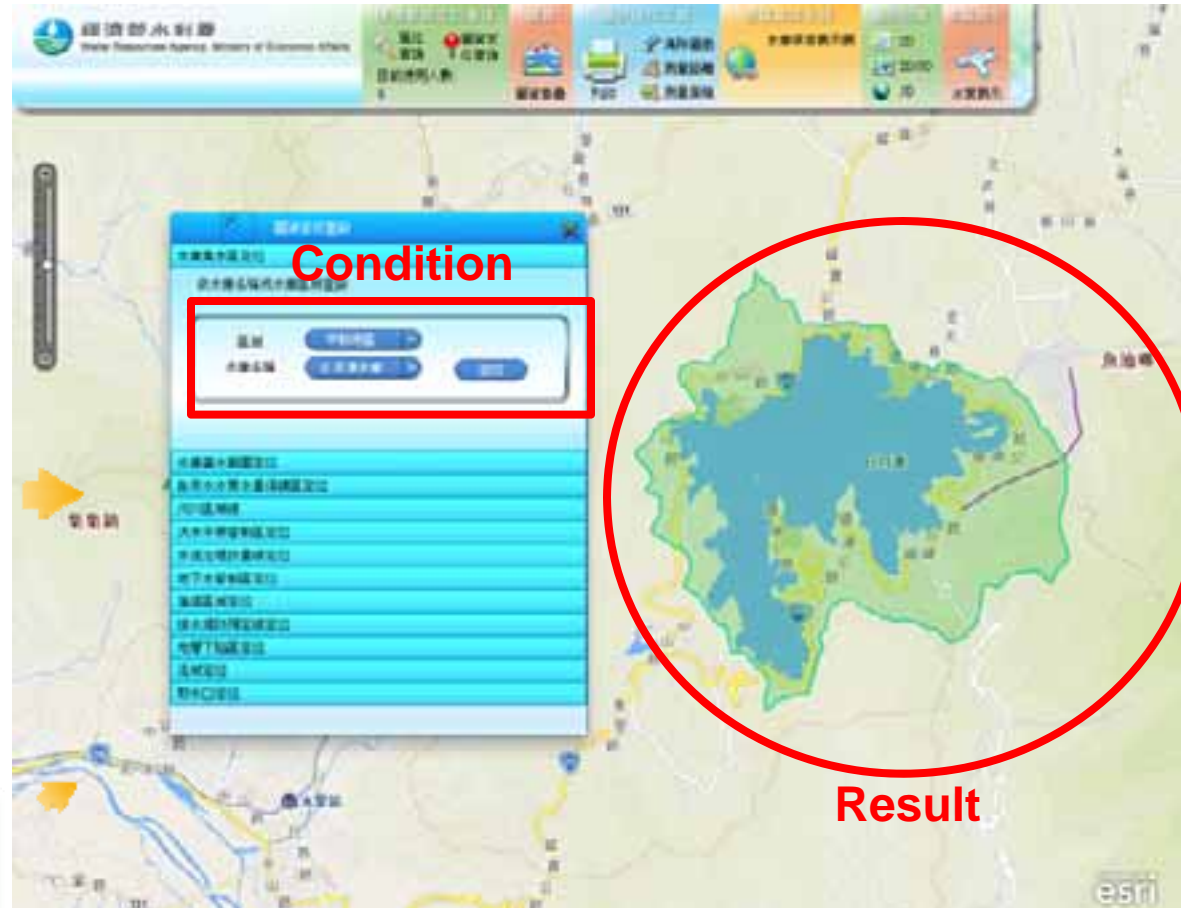
- **Identify Query**
- **Cadastral Layer**



Location Query with different layers



- Query feature by condition
- 12 Layer
- External Data & SDE Data



External Data



Server

Overlay

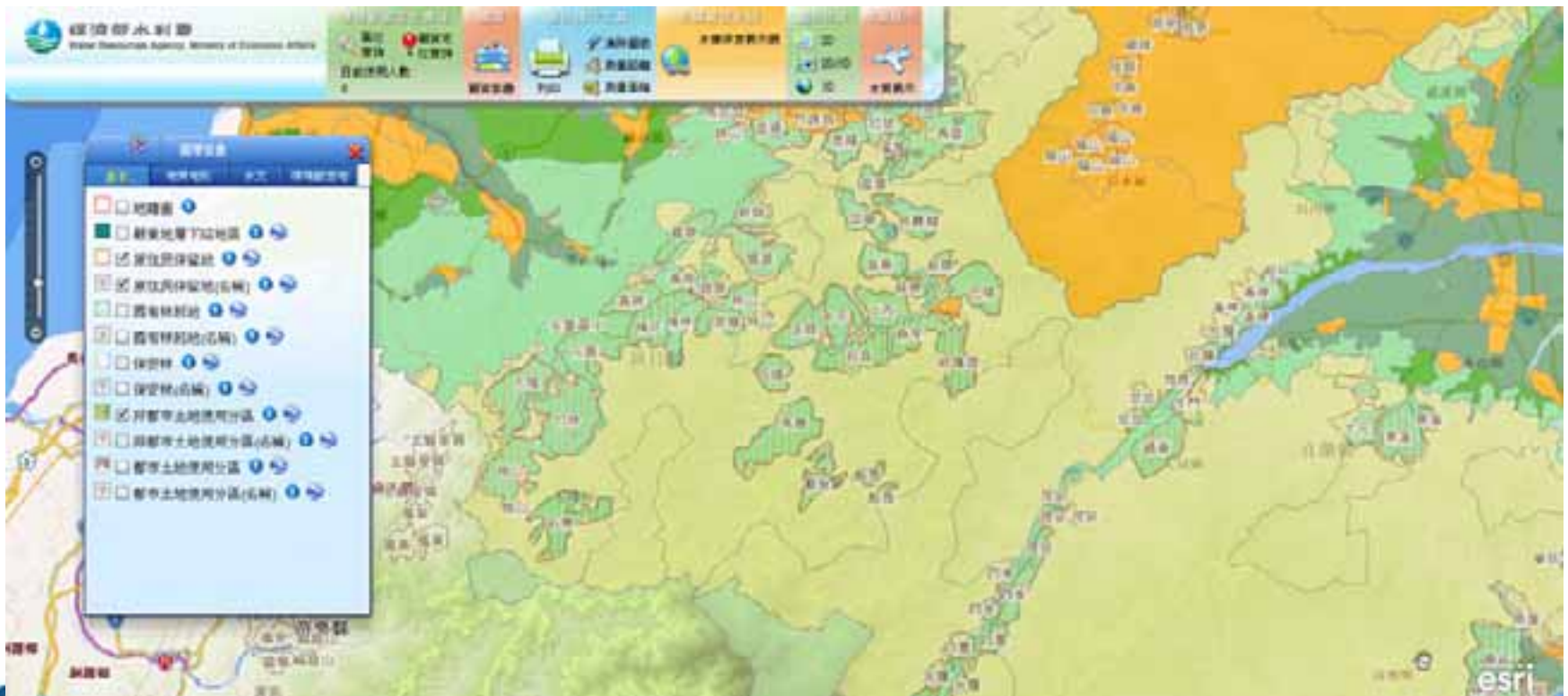


Category

- Basic(12)
- Geological and topographical(10)
- Hydrological(29)
- Sensitive environment(2)



- All layers can be opened by **Google Earth** in the left window
- All layers can be opened only with specific scales



Identify layers



Layer Information

Layer name



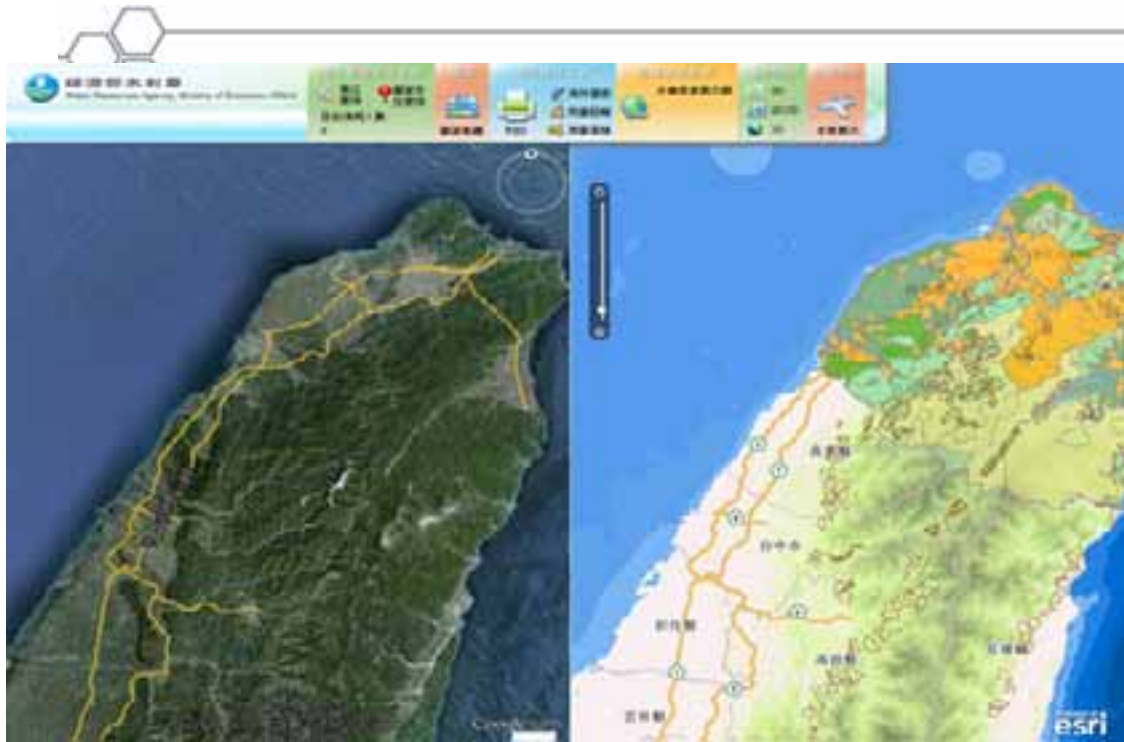
✓ User can make a pin on the map, then click “**location layer query button**”.

✓ The query results will be shown on right hand side.

✓ The results include

- the intersection of **10** sensitive Layer Query
- Layer switch
- Layer information

2D/3D Mode



22 Layers

KML

- Basin
- Drink Water Protect Zone
- Coast
- Hillside
- ...
- ...

Draw

The features get from ArcGIS server. It can draw dynamically on Google Earth .

Scale & **Envelope** Synchronous Change



DrawFeature



Open KML



Server

Feature Set

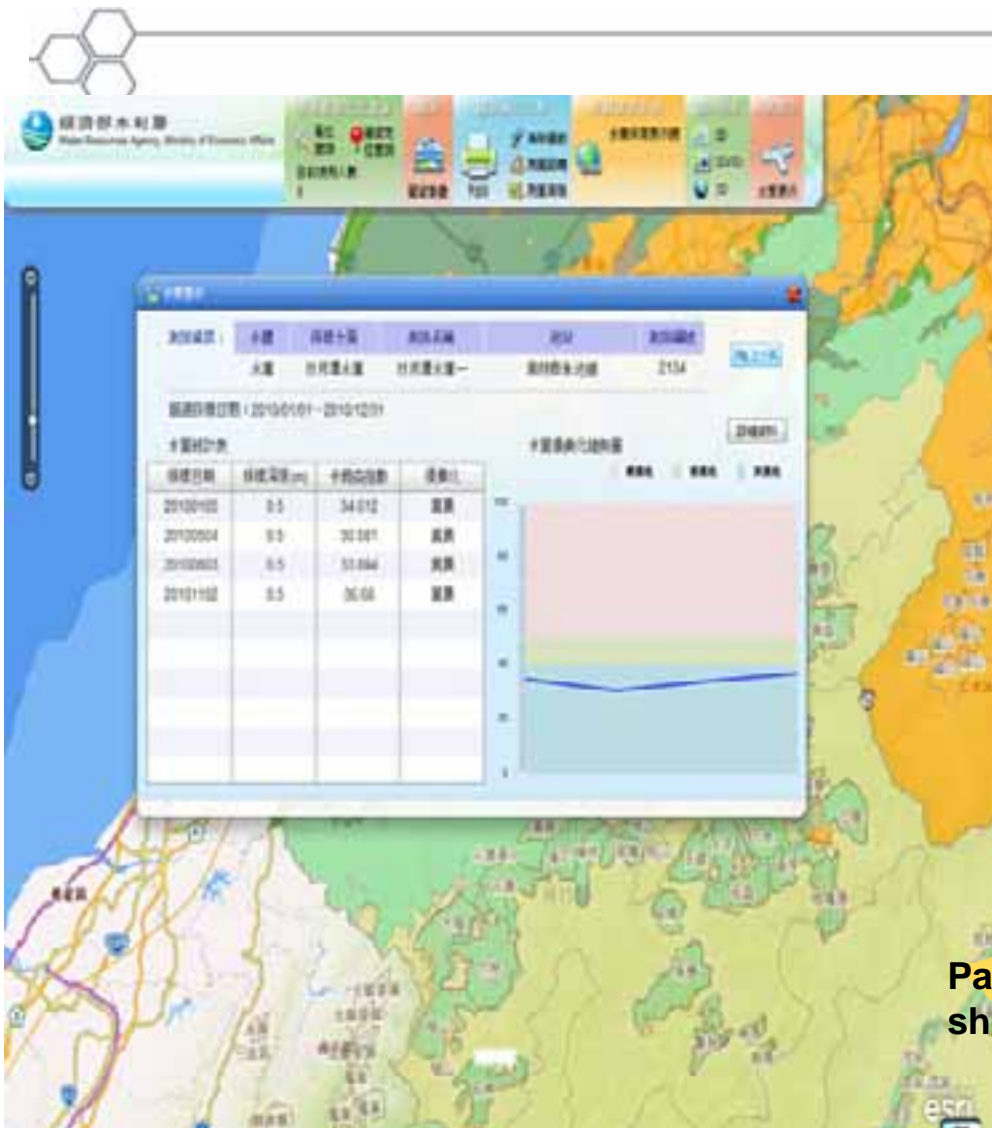


Layer Name



Web

Water Quality



- Query Reservoir's Quality
- The data get from
 - EPA's web service
 - Monitoring stations
- Information
 - Sampling depth
 - CTSI
 - Eutrophication & Trends
 - ...
 - ...



Conclusion



- Integrated Manage
 - Quickly Search
 - RealTime Data
 - Auto Response
 - Helpful for Analysis

- Rich and Friendly User Experience
 - Low learning curve





Thank You For Listening!

