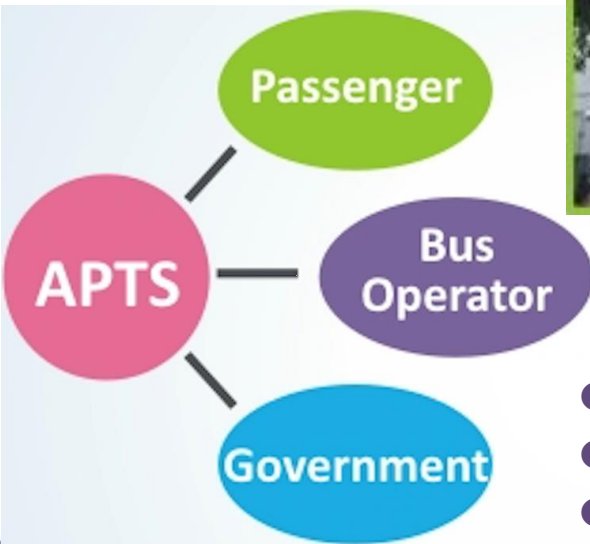


The Development of Transit Service Assessment System with APTS Database

Huang, Li-Chin
Institute of Transportation, MOTC
Chinese Taipei

Application of APTS in Chinese Taipei



- Trip Planning
- Estimated Bus Arrival Time
- Bus Stop Information Broadcasting
- Electronic Payment System

- Scheduling and Dispatching
- Fleet Monitoring
- Management Information System
- Driver Behavior Analysis



- Evaluation of Bus Service
- Audit of Subsidized Routes
- Supply and Demand Analysis
- Examination of Operation Plans

Transit Service Assessment System with APTS Database (TSAS) A Powerful Diagnostic and Prescription System

Convenience !!



Inconvenience !!



Social Equality ?



Transit Service

Spatial Gaps ?
Temporal Gaps ?
Strategies ?



Transit Service
Seamless Clinic

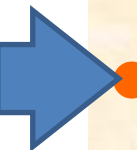


The System Architecture of TSAS

Household Data
(ex.Population,GPS Coordinate)



**Traffic Network
Digital Map**



APTS Database



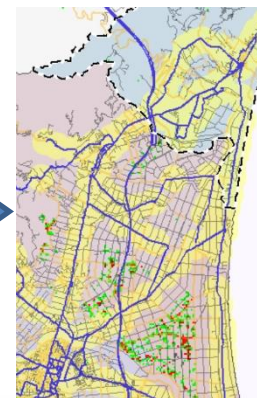
Bus Operation Data
(ex.Cost,Subsidy,Level of Service)



- System Management Setting
- Cities' and Counties' Basic Data Setting
- Bus Routes and Transportation Nodes Inquiry
- Annual Assessment of National PT Services
- Assessment of PT Services for Basic Needs of Local People
- Assessment of PT Services for Tourists
- Evaluation of PT Services Improvement Plans



Tables

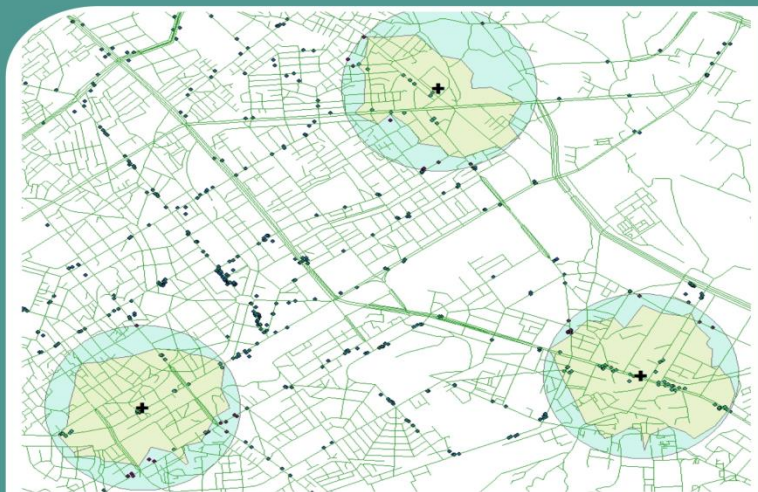


Graphs

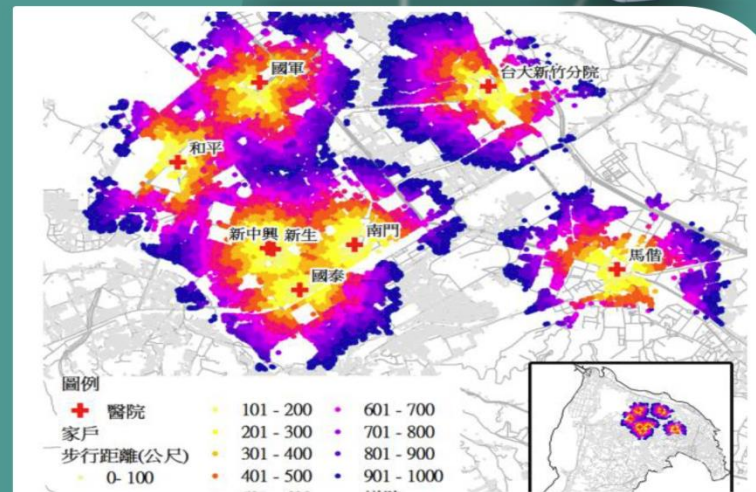
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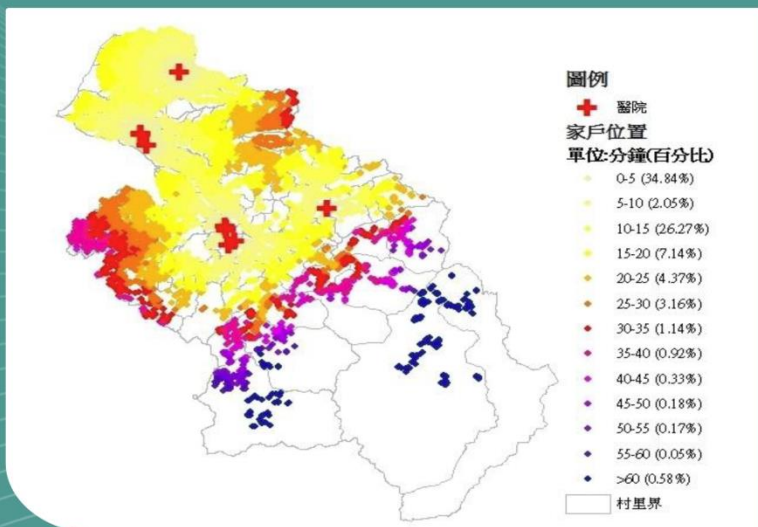
26-29 MAY 2015



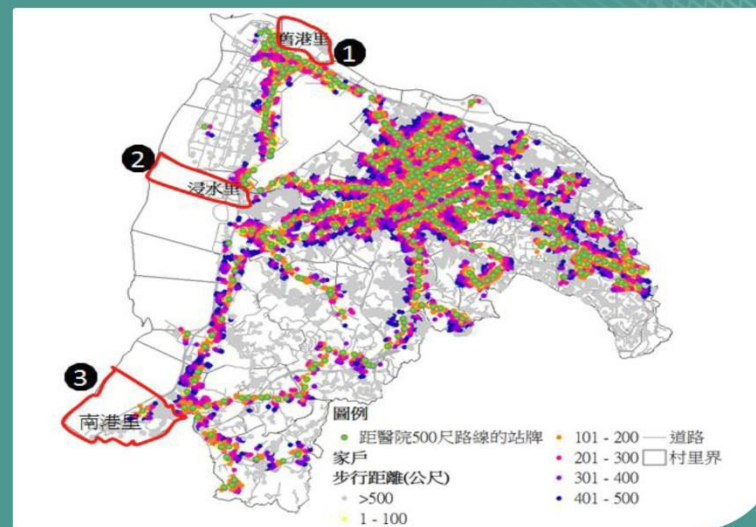
Service Coverage of Each Bus Stop



Service Coverage of Bus Routes to Hospitals



Hospitals Accessibility by Bus



Spatial Gaps of Bus Service to Hospitals

26-29 MAY 2015

What Can TSAS Help Us?

- Without TSAS

- ◆ We are not sure whether bus service meets peoples' need.
- ◆ We lack enough evaluation information to examine application cases about bus operation plans.
- ◆ We measure bus service performance roughly or effortlessly.

- With TSAS

- ◆ We know where the spatial gap of bus service exists.
- ◆ We know when the temporal gap of bus service exists.
- ◆ We know the accessibility and mobility of the trip from specific O/D.
- ◆ We know the impact of running a new bus route.
- ◆ We know the impact of adjusting operation plan of an existing bus route.
- ◆ We know the impact of closing an existing bus route.
- ◆ We can measure bus service performance more thoroughly and easily.

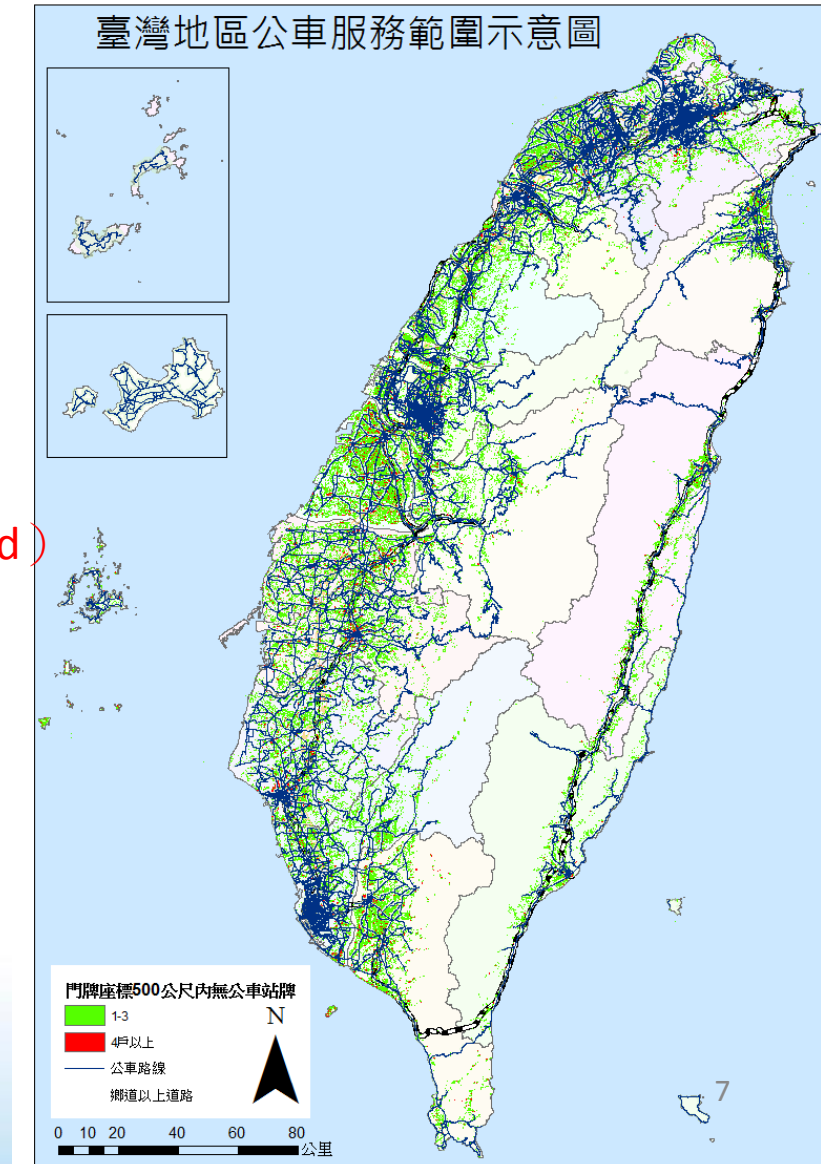
26-29 MAY 2015

More than 2/3 local governments have started or are going to use TSAS

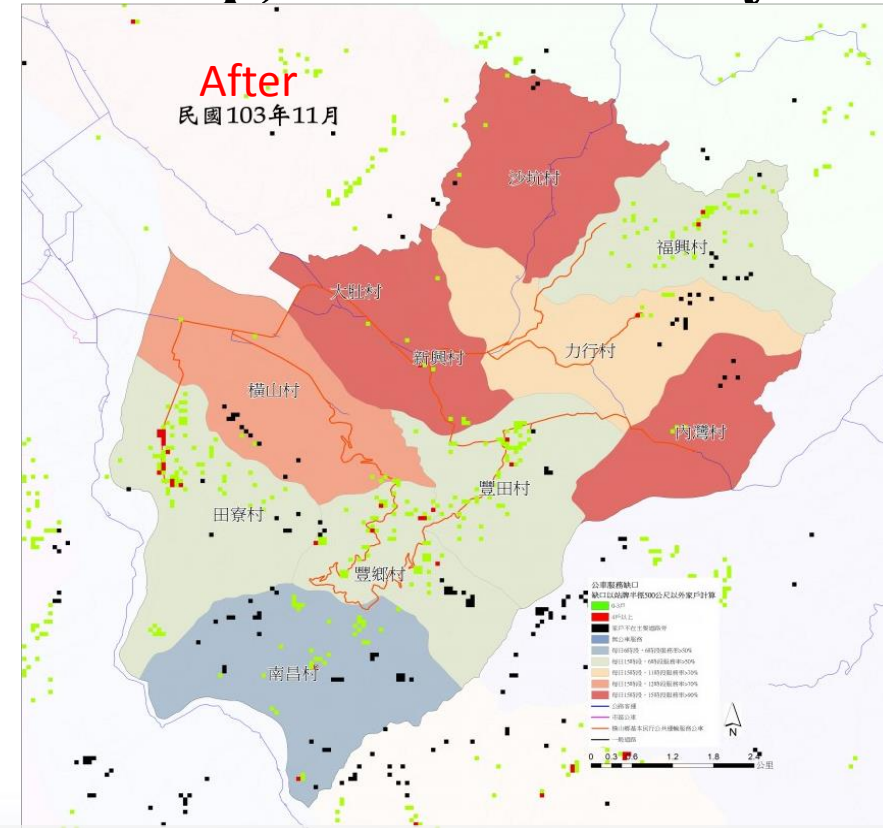
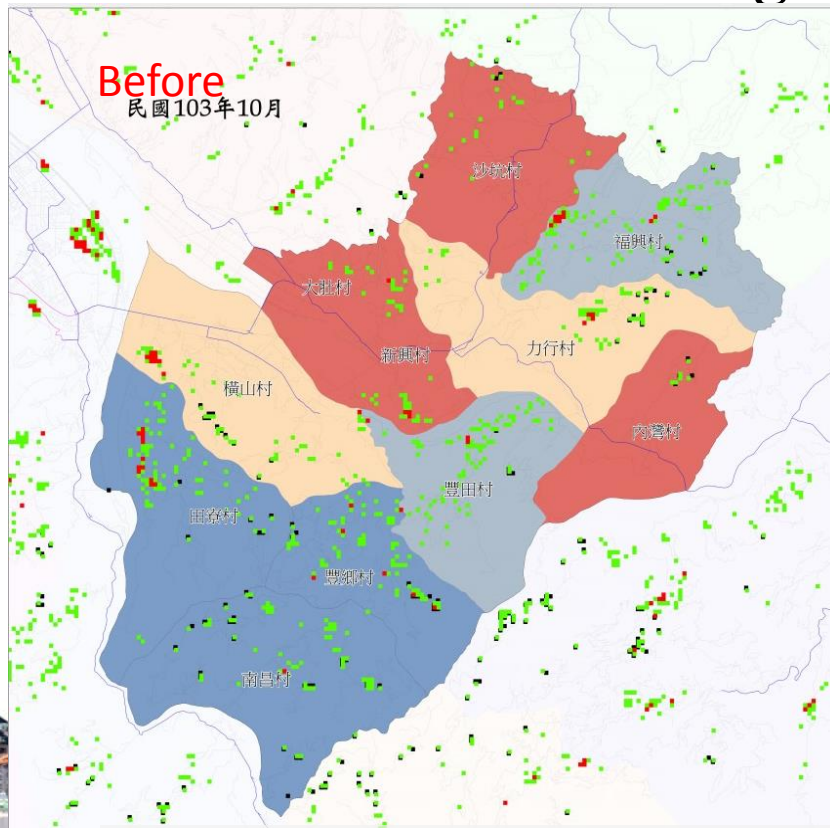
The Spatial Gap of Bus Service
(no bus stop within 500-meter area for each household)

- Bus Service Gap(1-3 households)
- Bus Service Gap(more than 3 households)
- Bus Service Gap(households without roads wider than 6 meters within 500-meter area)

- intercity bus routes
- City bus routes
- Township bus routes



26-29 MAY 2015 The Assessment of Public Transportation Service in Hengshan Township, Hsinchu County



no bus service

There are bus services in 6 hours, service coverage > 50% households in 6 hours.

There are bus services in 15 hours, service coverage > 50% households in 6 hours.

There are bus services in 15 hours, service coverage > 70% households in 11 hours.

There are bus services in 15 hours, service coverage > 70% households in 12 hours.

There are bus services in 15 hours, service coverage > 90% households in 15 hours

On-Going Project for TSAS

- We have obtained more detailed data about households and population distribution from Ministry of Interior. It will help us know more about the potential passengers in specific areas.
- We are trying to obtain the data of Electronic Payment System from bus companies. It will help us know more about the regular passengers' need.

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26-29 MAY 2015



Thank you very much
for your attention.

