jgb1

Transportation Innovation: Toward a More Green Destination

by

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Diapositiva 1

jgb1 Select a background that is a Penghu scene.
jb; 11/10/2008

Introduction

For many destinations the automobile/private vehicle is critical

- To get there
- To get around once there

Introduction

Conference themes that guided my presentation are

- Tourism commitment towards climate change. Opportunities and challenges
- Adapting (Innovating) Tourism Products and Destinations

Penghu

Themes prompted thinking about innovative ideas for Penghu, Taiwan

- Penghu is an archipelago
- It is the archipelago off Taiwan where I'm Dean of Nat'l Penghu Univ.
- 64 islands scattered over 60 kilometers by 22 kilometers in the Taiwan Straits

TAIWAN


Travel Map of Taiwan
Kinmen and Matsu Islands
Matsu National Scenic Area
中國大陸
China
東海
Eastern Sea
台灣海峽
Taiwan Strait
台灣
Taiwan
Kinmen National Park
Islands off Keelung
Penghu County
澎湖縣
Penghu National Scenic Area
Taiwan Strait
Pacific Ocean
LEGEND
Penchu

Penghu


Map of Penghu Archipelago
Mudou Island
目斗嶼
Mudouyu Lighthouse
Jibei Island
吉貝嶼
Jibei Sea Playground
Gupo Island
姑婆嶼
Tiejan Islet
鐵砧嶼
Shianjiau Island
險礁嶼
Tudigung Islet
土地公嶼
Jin Islet 金嶼
Baisha Island 白沙島
Baisha Islet
白沙嶼
Niauyu 鳥嶼
Shiaumen Island
小門嶼
Yuanbei Island
員貝嶼
Jishan Islet 雞善嶼
Yuweng Island
漁翁島
(Shiyu西嶼)
Dinggou Island
錠鉤嶼
Datsang Island
大倉島
Jungtuenyu
中屯嶼
Magung City
Magung Island
馬公島
Szjiauyu
四角嶼
Jilung Islet
雞籠嶼
Hua Island
花嶼
Tungpan Island
桶盤嶼
Hujing Island
虎井嶼
Wangan Island
Mau Island
貓嶼
Tsau Island
草嶼
Jiangjiunau Island
將軍澳嶼
Chuanfan Islet
船帆嶼
Chutou Island
鋤頭嶼
Dungji Island
東吉嶼
Shiji Island
西吉嶼
Nantiejan Islet 南鐵砧嶼
Shiyuping Island 西嶼坪嶼
Chimei Island
七美島
Dungyuping Island
東嶼坪嶼
N
County Road
Shiang Road
Main Attractions
Visitor Service Center
Airport

Penghu Islands

You get there by

- Ferry bringing your vehicle

or

- By air
- By boat

and find transport on the islands

Penghu Connected Islands

Yuweng

Datsang

Magung

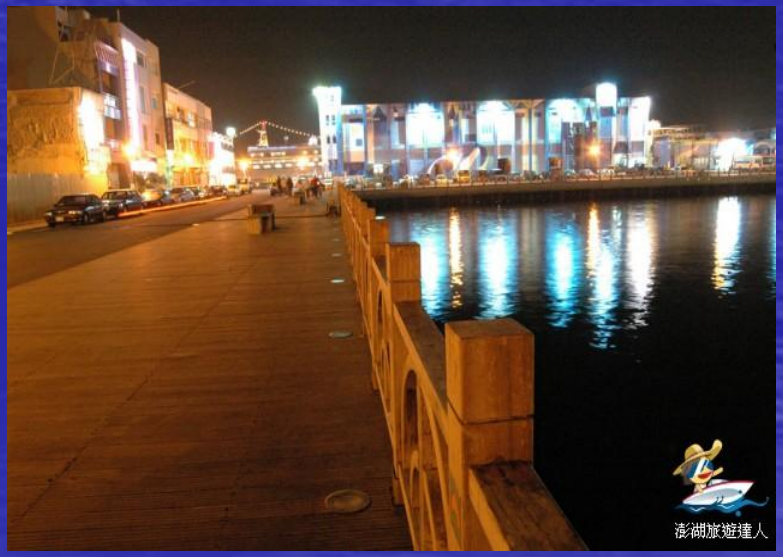
Penghu Connected Islands

- 100 Km of road driving from furthest points across the connected islands
- Many places for tourists to go/see.
- For example;

Departure & Arrival

Around the Magong Airport

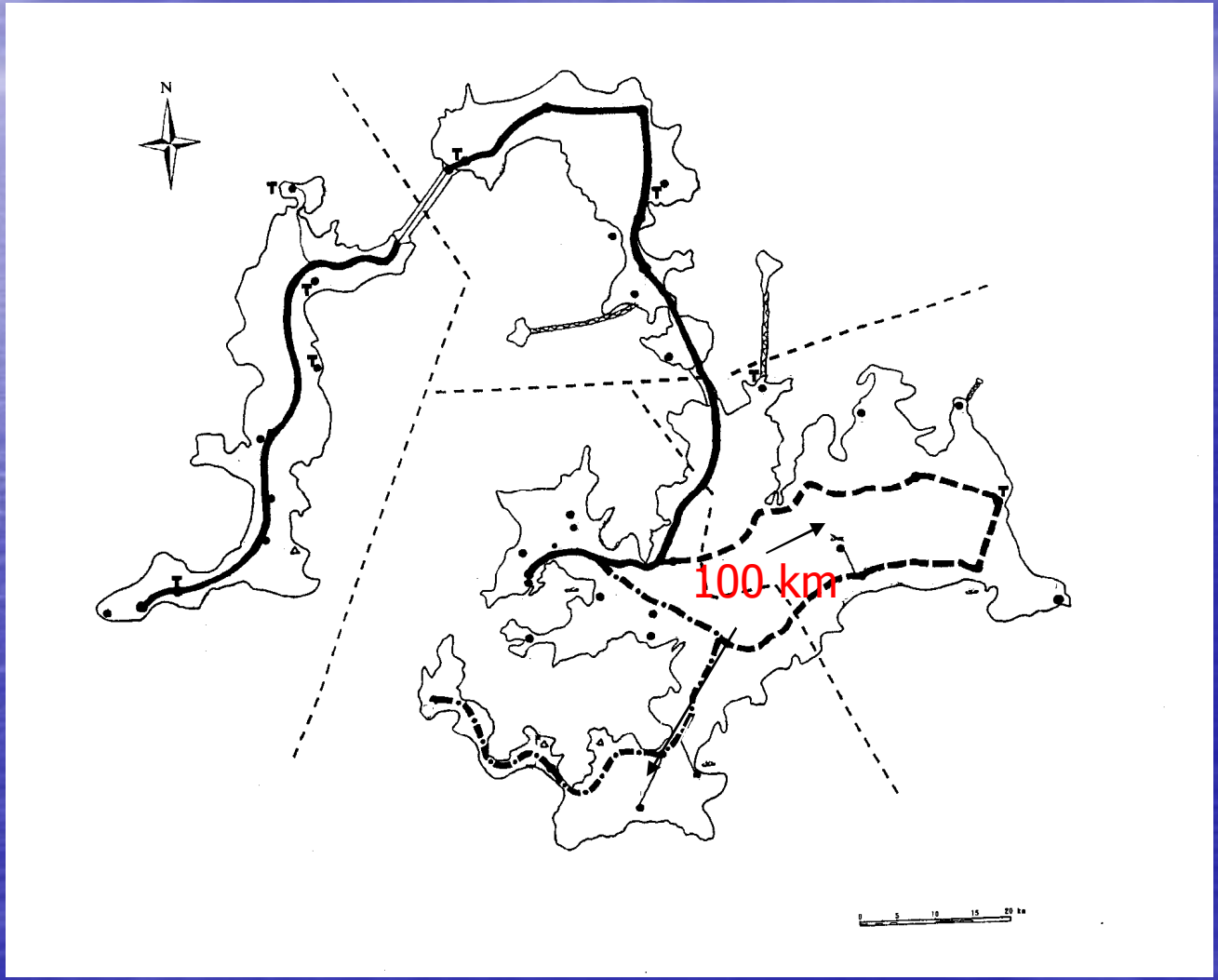
Magong City



North & West Islands

jgb2

Connected Islands Travel



Diapositiva 14

jgb2 You need more distances and need them better displayed. You could still send slides but indicate you will still make a few revisions.
jb; 14/10/2008

Again, Conference themes that guide my presentation are

- Tourism commitment towards climate change. Opportunities and challenges
- Adapting (Innovating) Tourism Products and Destinations
- So, we will consider travel now and innovative changes

Taiwan, mopeds and electric scooters (ES)

- Scooters are a major means of transport in Asia – people know how to ride them safely and accept them for transport
- Gas motor scooters have adverse effects on local air quality and public health
- many Asian governments have passed legislation to either restrict or ban two-stroke scooters (Taiwan 2003)

- To reduce pollution, Executive Yuan set aside $185 million for "Electric Scooter (ES) Development Action Plan" (started 1998 Stopped in 2002 because not successful)

➢ ES are being improved

➢ However, ES are not well accepted because

  - long recharge time
  - distance traveled without recharge
  - availability of recharge
  - heavy weight of scooter with batteries

ES and Tourism: Wang-Penghu

Wang recognizes that ES can be viable and greener transport in Penghu

- If tourists accept ES as good transport
- Must be able to go where they want
- Must not worry about running out of charge, about being stranded

ES and Tourism: Wang-Penghu

Wang addresses viable ES use by a mathematical/computer simulation of behavior considering that:

- Even on Penghu ES staying charged (range for a day trip) is a problem
- Slow recharge and range must be addressed until there are better batteries

ES and Tourism: Wang-Penghu

To address slow recharge and ES range

- There must be recharge stations meeting range and recharging time requirements
- Must be located to facilitate tourist travel
- Recharging must not disrupt the tourists' experiences
- ES must be affordable

ES and Tourism: Wang-Penghu

Wang has devoted several papers on mathematical systems, models, so recharging does not impact the visitor experience (references available).

For modeling there are

- assumptions
- mathematical equations
- analysis (solution of, e.g., an optimization problem)

ES and Tourism: Wang-Penghu

Wang *basically* assumes

- Tourists capable of and willing to use ES
- Tourists will travel to Penghu locations and spend enough time at them to allow ES recharge
- Average stay at destination areas allows calculating viable locations for recharging so being stranded is not a risk

jgb3

ES and Tourism: Wang-Penghu

This is not the place to pursue mathematics/ computing models.

- Wang arrives at plans for recharge stations.
- One "good" solution has stations as seen next.

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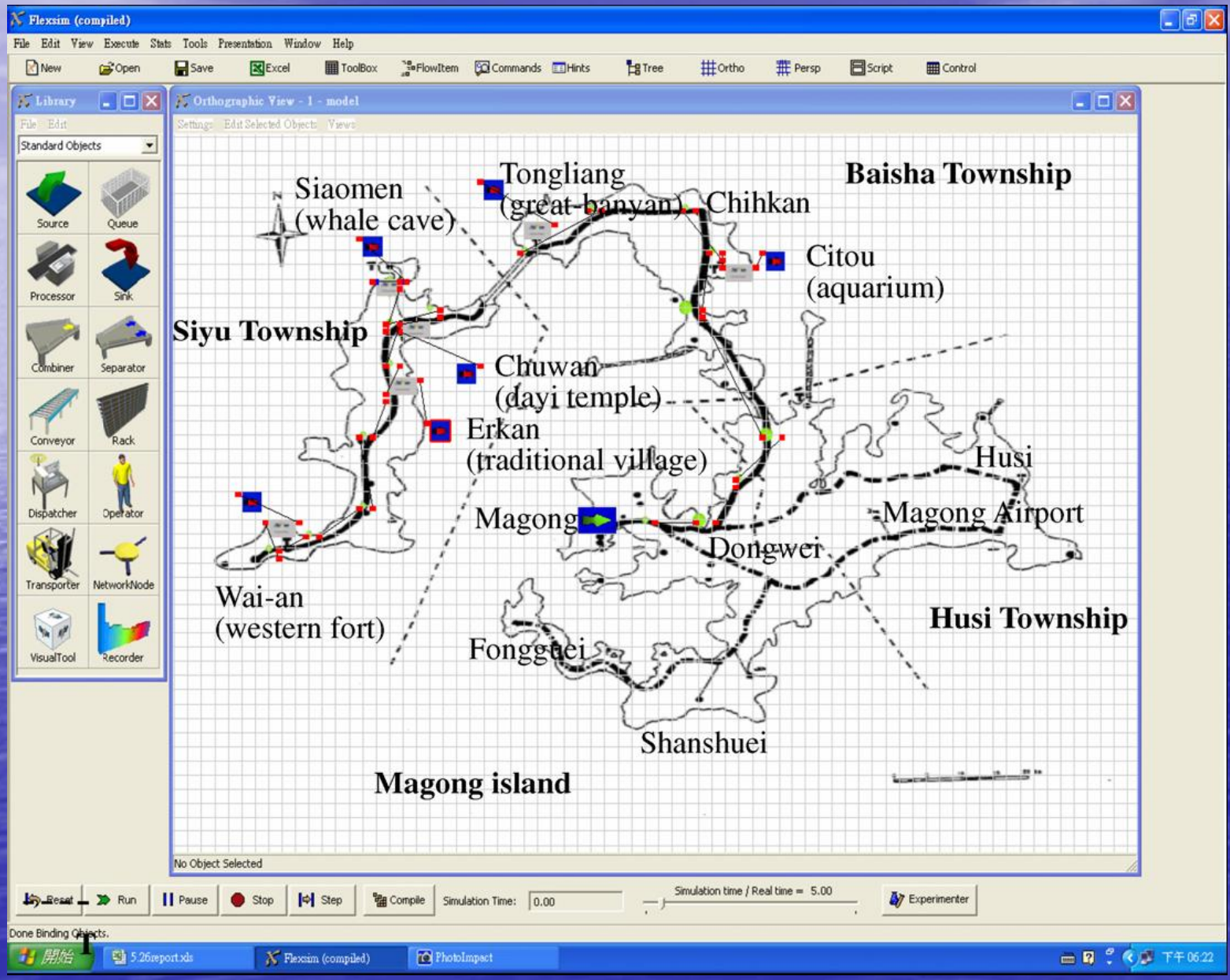
jgb3 Changed below to seen next
jb; 14/10/2008

Simulation model of the electric scooter travel system



ES and Tourism: Wang-Penghu

Wang's math leads to a recharge station location plan. But,

- What should people pay for ES use?
- Is analysis based on average stay at attractions good for tourists with short stays (below average)?
- What about visitors with no experience using scooters?
- Are ES really viable for families?

ES and Tourism: Wang-Penghu

Wang has initiated important considerations and analysis for greener transport at destinations.

- Considering using greener transport involves complex analysis
- Wang's work for Penghu allows/facilitates more elaborate/realistic modeling

Making progress in analysis for greener destination transport

This presentation is to prompt thinking and awareness that sophisticated analysis can facilitate introduction of greener transport in ways that are viable.

- Most Penghu visitors may be comfortable driving scooters
- The price of getting personal vehicles to Penghu or "car" rental may make scooter use a good choice (e.g., given good weather)

Viability and greener destination transport

- Theft of ES or other greener transport should not be a problem on the connected islands
- In fact, using GIS most vehicles can be found and reached in minutes for accidents or other problems

For destinations other than Penghu

What are the issues, problems, and modeling assumptions?

- For every location there may be special assumptions
- Thought about and analysis for locations other than Penghu are necessary to build effective tools for analysis.
- Building tools requires cooperation between transportation and tourism specialists

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jgb5 modified 2 to be 2 and 3
jb; 14/10/2008

Now is the time for your input

- Can we get people separated from their cars at destinations they drive to?
- Is greener transport affordable for business to offer, for example, for people that cannot safely ride scooters?
- Do people like Wang need to work on solutions that are based on tourists' real daily travel patterns?
- What do YOU see as needed?

Thank you!

Now is time for your input and FOR me to take notes.

Next we go to questions from the last slide.

Please give me your input.

WHAT ARE YOUR THOUGHTS?

- Can we get people separated from their cars at destinations they drive to?
- Is greener transport affordable for business to offer, for example, for people that cannot safely ride scooters?
- Do people like Wang need to work on solutions that are based on tourists' real daily travel patterns?