

**World Urban Transport  
Leaders Summit 2010**

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## **Urban Sustainable Transport in China: Challenges and Practices**

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## **Urban Sustainable Transport in China: Challenges and Practices**

Institute of Transportation Engineering,  
Tsinghua University  
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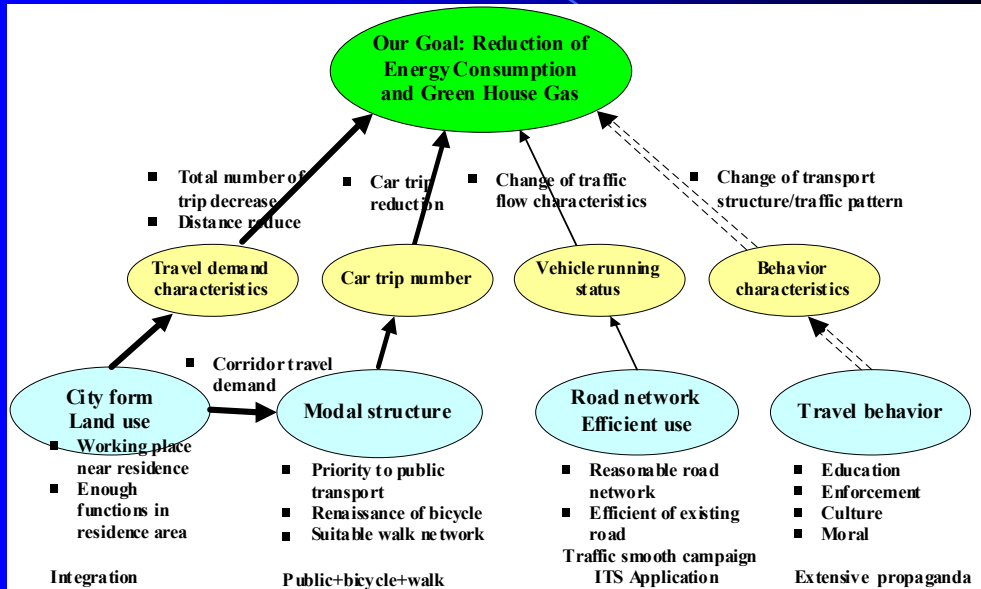
## Outline

- Challenges facing urban transport in China
- Major influencing factors of sustainable urban transport
- Innovative practices of urban transport in China
- Integration of land use and transport: planning framework
- Conclusions

## Challenges facing urban transport in China

- Common problem
  - Traffic congestion
  - Traffic accident
  - Environmental problems
  - Energy security
- Special problem in developing country
  - Lack of infrastructure and traffic facilities
  - Bad travel behavior
- Big gap
  - between existing system and Green transport; Low carbon transport; Sustainable transport; People-oriented environment friendly transport

## Transportation Towards low carbon society: our understanding



## From efficiency priority to green transport

Last ten years:

- “Traffic Smooth Project” Practice in Chinese cities

Future ten years:

- Sustainable Transport System Era: Green, Low carbon, People-oriented

## Background of “Traffic Smooth Project”

Road is occupied by market



**Disorder in the intersection and without traffic operation measures**



**Cross road violating the traffic regulation**

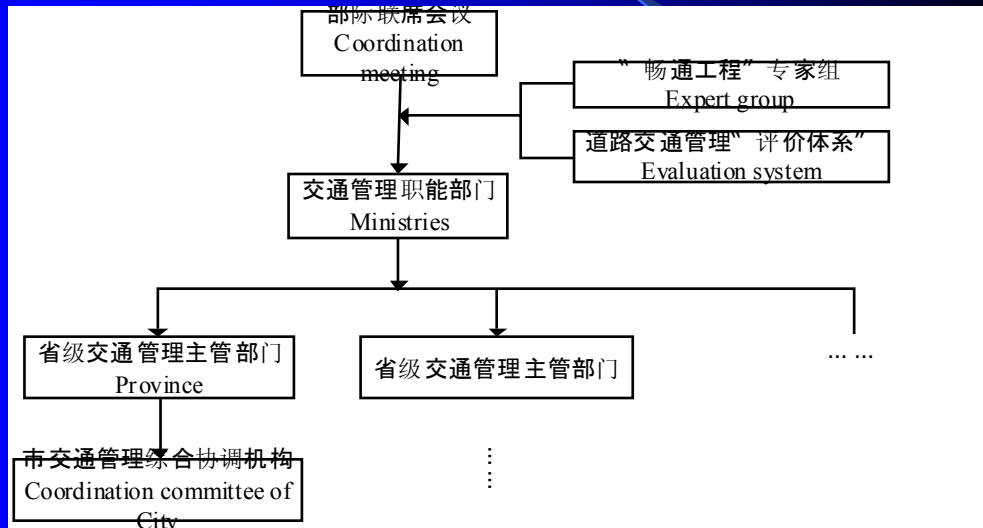


## Extremely concentration of bus lines



The driving mechanism and the  
leadership

## The driving mechanism and the leadership



## National Evaluation system

- Mechanism, policy and planning
- Land use and public transport
- Road infrastructure
- Traffic facilities
- Traffic management countermeasures
- Education
- Technologies
- Traffic order
- Traffic congestion
- Traffic safety

## The success and the key lessons

## The success and the key lessons

1. **The urban transportation planning and scientific traffic management concept has been updated.**
2. **The level of urban traffic management has been improved.**
3. **The urban traffic congestion has been relieved relatively.**
4. **The urban transport infrastructure has been developed.**
5. **The awareness of traffic civilization has been increased.**

## The success and the key lessons

6. The urban traffic structure has become more rational and public transport .
7. The capacity building of traffic police and urban planning engineers have been strengthen.
8. The great economic benefit has been achieved.
9. The traffic safety situation has been improved.

## People are waiting for traffic signal in order ( Hu-He-Hao-Te city) in 2000



People are waiting for traffic signal in order  
( Kun-Ming city) in 2003



Improve traffic infrastructure



Traffic signs



Multiform traffic sigs

## Traffic organization and channelization



Scientific traffic organization



Channelization



## Public transport priority

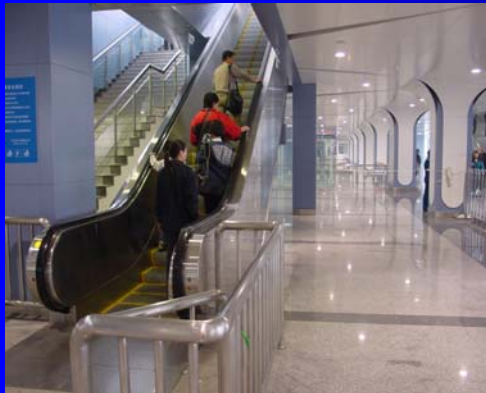


Implement public transport priority



Standardize parking

## Public transport priority





- Provide safe, convenient, comfort, continuous walking way.

## Minor road enough utilization and pedestrian road guidance system



## Zebra crossing and traffic signs





## Modernization of law enforcement, intelligence of management



Advance equipmen  
t

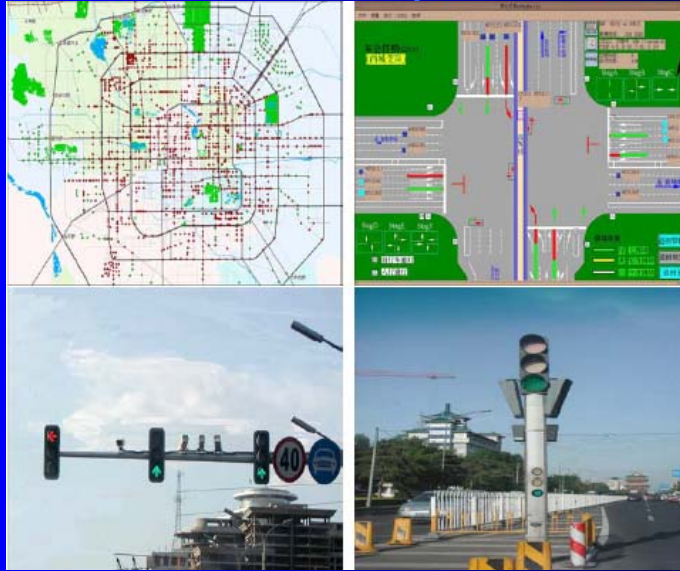


Management system

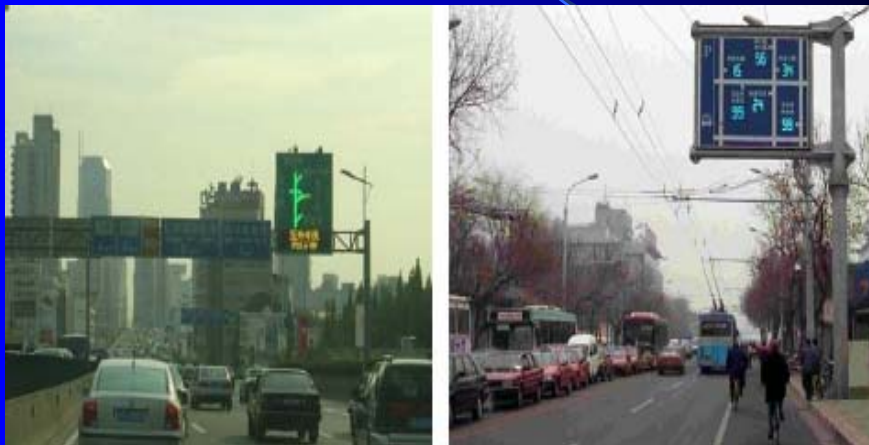
## Traffic Command Center



## Advanced signal control system



## Real-time traffic guidance



Pay attention to the overall urban landscape



Organize vehicle and people





**Green space is considered (Da-lian)**



## Transport, landscape and ecology



## Harmony the infrastructure, architecture and landscape( Qing-Dao)



## Land use, transport and landscape



## Promote the use of bicycle



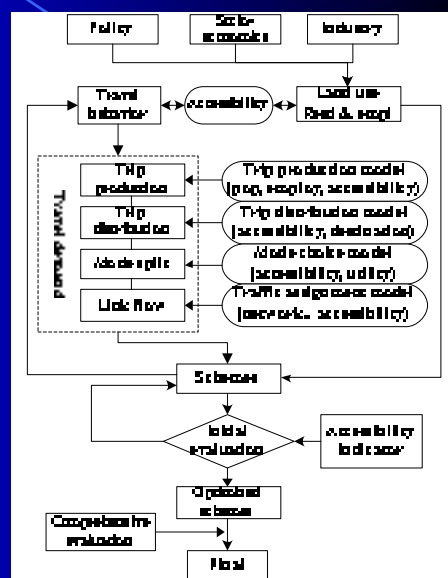
## The future ten years: Eco-city and green transport

**Key points:**  
**Integration**  
**Improvement of accessibility**

### Transportation Planning based on Accessibility

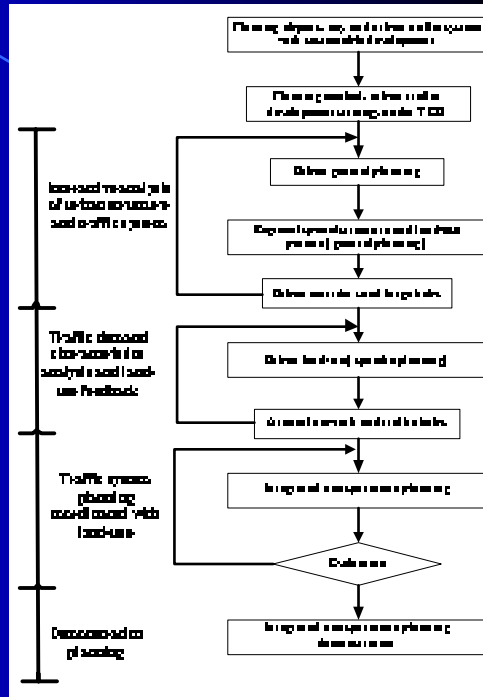
- Theory and Methodology for Sustainable Urban Mobility Planning -

- Based on social economy and industry localization, summarize the transport network, housing/employment distribution and resident trip characteristics by using existing land use models, to provide basic data for travel demand analysis;
- Add the accessibility into traditional four step travel demand analysis as importation feedback condition of the model;
- Use the indicator system which includes accessibility to carry out comprehensive evaluation and multi-objective optimization to obtain optimum plan.



## The flowchart of land-use and transportation integrated planning

- Four steps:
  - macro interactive feedbacks and adjustment among city form, land-use and transportation system
  - micro interactive feedbacks and adjustment among city form, land-use and transportation system
  - coordinated road network planning and comprehensive transportation system planning
  - planning implementation



## Conclusions

- **Road map to realize low carbon society from transport viewpoint:**
  - Reasonable urban form: change the demand characteristics
  - Public transport priority
  - Reasonable infrastructure
  - Efficient utilization of transport infrastructure: ITS
- **Key points:**
  - Integration
  - Improvement of accessibility
  - Consciousness and behavior of citizen
- **Comprehensive consideration:**
  - demand, resource and environment, equity and harmony

Thank you very much for your  
attention !